

MINERAL RESOURCE DEVELOPMENT

- 21.01 **Comment:** It is part of BLM's duty, established by Congress, to encourage development of federal mineral resources and provide best land use and multiple use of natural resources.

Response: BLM's policy is still to encourage mineral development on public lands open to mineral entry. The EIS displays a range of alternatives for analysis in managing mineral development on these lands. The alternatives allow for a reasoned decision to be made what changes, if any, should be made to the existing regulations for mineral development, multiple use, and the prevention of undue and unnecessary degradation.

- 21.02 **Comment:** Precious metals producers focuses particularly on environmental regulatory issues that affect gold mining. Because gold mining has grown tremendously in the United States during the last 20 years, the industry has gained a heightened level of scrutiny from regulators and the public. New technologies, the price of gold, and other developments have combined during this period to make the United States the second largest producer of gold in the world. A large portion of this gold is produced in Nevada and other western states, and often partly or predominantly on lands managed by BLM or the U.S. Forest Service (USFS). Even though many gold mines operate partly on federal lands, they affect only a tiny fraction of the lands in federal ownership.

Response: BLM recognizes that the public land affected by mineral activities is small compared to the total land administered by BLM. But where mineral activities occur, the amount of natural resource degradation can be highly destructive and have long-term impacts. Congress recognized this fact through the Federal Land Policy Management Act, which instructed BLM to manage public lands for mineral development and to ensure no unnecessary or undue degradation of public lands.

- 21.03 **Comment:** Table 2-3 appears to ignore the large acreage of public lands withdrawn, or significantly restricted through administrative action (withdrawal, designation of restrictive land use, by designation of natural heritage sites, etc.). These restrictions adversely affect the ability to appropriately mine public lands under the federal mining laws.

Response: The purpose of this EIS is to analyze the impacts of managing mineral development of locatable minerals on public lands open to mineral entry. Assumptions in Appendix E have been modified to reflect the loss of access and reduced mineral development from recent withdrawals. The assumptions and level of mineral activity described in Appendix E are what then drove the analysis of impacts in Chapter 3.

- 21.04 **Comment:** By consolidating analyses of exploration and mining operations, the draft EIS obscures the reality of the impacts of the proposed regulations on exploration. These impacts would affect small companies, geologists, and prospectors.

Response: The draft EIS tried to show separately the impacts of the regulations on exploration and mining. In response to public comments, we determined that the sections needed to be rewritten to more clearly show the distinctions between the two operations. (See Chapter 3, Mineral Resources of the final EIS.) The final EIS also includes several new mine models that define the smaller exploration operation and mining projects.

- 21.05 **Comment:** Mineral exploration and development should be conducted in a manner to avoid do unnecessary or undue damage to other surface resources, both on site and off site. And there should be guarantees of reasonable land reclamation after the mining is finished within the post land uses identified through the NEPA process.

Response: BLM agrees. The draft EIS analyzes methods of meeting these goals through the alternatives presented. Post land uses will continue to be developed though the land use planning process. The process includes public participation and will be covered by the proper environmental documents. The Plans of Operations will also include environmental documents that analyze the proposed reclamation and how it relates to the post land use determined in the land use plan.

- 21.06 **Comment:** BLM should encourage remining as an economically attractive and environmentally appropriate use of abandoned mine property.

Response: This suggestion is outside the scope of the surface management regulations and was not addressed in the draft EIS. BLM recognizes the environmental benefits of remining and has in the past and hopefully in the future will be reviewing these actions on a case-by-case basis. But at the time of this writing, Congress, in cooperation with EPA and the Western Governor Association, was exploring this option under Senate Bill (S 1787)—the Good Samaritan Mine Cleanup Bill.

- 21.07 **Comment:** The proposed regulations should address open pit mining techniques. The existing regulations should be strengthened to protect the environment from the use of cyanide in the mining process.

Response: The alternatives address several options for managing both open pit mining and the use of cyanide. See Chapter 2 of the draft EIS and final EIS.

- 21.08 **Comment:** BLM should retain or expand the 5-acre exception for exploration to encourage mineral development. The draft EIS does not adequately address the impact of the proposed regulations on exploration. BLM's approval process for exploration must recognize that mineral exploration is fundamentally a phased and iterative undertaking. There are no Notice issues or regulatory gaps in the Notice-level process relating to exploration that could not be solved by improved administration and implementation of the existing 3809 regulatory program. The proposed changes will not result in improved

administration, a higher level of environmental protection, or better reclamation.

Response: BLM and the National Resource Council study (NRC 1999) have recognized potential regulatory gaps. The alternatives present several options for dealing with these gaps, including exploration and its impacts. The current Proposed Action includes the provision of a Notice for exploration. BLM recognizes the fluid nature of exploration and the quick response times needed to continue a reasonable exploration program. But BLM must ensure, as directed by Congress, that no unnecessary or undue degradation of public lands occurs.

21.09 **Comment:** The proposed regulations should not include exemptions for small mines.

Response: Your comment is noted. No mining is exempt from the proposed final regulations unless classified as casual use. All operations except casual use will be reviewed and bonded. Any mining will be conducted under a Plan of Operations. The regulations that will apply to a project will depend on its type, size, and location and will be determined by specific aspects of the project on a case-by-case basis. All operations, regardless of size, must prevent unnecessary or undue degradation.

21.10 **Comment:** The permitting process is so onerous and uncertain that few companies will be willing to expend the time and money to make the effort to develop mineral properties. The rules must not be so cumbersome that they frustrate and impede environmentally and economically sound mining actions.

Response: BLM's intent is to make the process as efficient as possible and maintain the requirements to ensure against unnecessary or undue degradation of public lands. We developed the alternatives to discuss the impacts of the methods proposed to ensure against such degradation. BLM will review operations on a site-by-site basis and should approve any environmentally and economically sound project.

21.11 **Comment:** Page 89, Affected Environment–Mineral Resource Development: BLM states: “Some operations could become fully operational mines exceeding 200 acres, be regulated only by a Notice, and still not have to undergo environmental review.” This claim makes no sense and is contrary to our experience with and understanding of the current 3809 regulations.

Response: This type of operation has occurred in several locations on public lands. For example, the Alligator Ridge Mine in Nevada was developed under a Notice in 1983 and was not placed under a Plan of Operations until 1991. BLM agrees that this type of action is rare and should not take place today. Therefore, we have revised the final EIS to remove this statement.

21.12 **Comment:** To provide any meaningful analysis of the potential impacts of new

regulations on the mining industry, the EIS must distinguish between exploration and mineral production and among the many varieties of mineral production that may occur on public lands.

Response: The final EIS analysis has been changed to show a difference between exploration and mining operations. The mine models and the alternative analysis have discussed a variety of operations and mineral types. But to discuss all of the mining and exploration methods in relation to all of the mineral commodities developed on public lands is unreasonable and does not result in any better analysis than a carefully selected variety. The final EIS has attempted to address mineral surface activities on public land and how they affect natural resources. The EIS discusses the mineral surface activities in the alternatives and analyzes these activities by their ability to prevent unnecessary or undue degradation of public lands for all mineral commodities.

- 21.13 **Comment:** Why are coal strip mines across the country held to different standards of reclamation, surface and ground water quality, and bonding requirements than locatable minerals?

Response: Congress has passed a different law—the Surface Mining Control and Reclamation Act (SMCRA)—for the surface management of the mining of coal, which BLM leases under the 1920 Mineral Leasing Act. Under SMCRA coal operations are held to a specific set of standards other than the general “necessary or undue degradation” standard set by the Federal Land Policy and Management Act for surface management of mining claims under the Mining Law of 1872. BLM has generated the proposed final regulations to carry out the intent of these laws and their standards. Coal and locatable minerals regulations carry basically the same mission of surface management. But because of difference in laws and public comments, the regulations differ enough to warrant separate standards.

- 21.14 **Comment:** The small miner/pro prospector has made all of the major discoveries of minerals and elements.

Response: BLM encourages the small miner and prospector to continue their work in locating mineral deposits.

- 21.15 **Comment:** The proposed 3809 regulations appear to be designed to favor the large mining companies and will eliminate small-scale mining, mining clubs, and the prospector in general.

Response: The proposed final regulations have been written to accommodate all types of mineral activities on public land. Each type of operation other than causal use will be reviewed and bonded to ensure against unnecessary or undue and degradation of public lands. BLM recognizes that sizes and types of operations differ, and the level at which a

performance standard must apply will be based on a site-specific operation and the resources affected by that operation.

21.16 **Comment:** The mining industry is not now subject to the performance standards.

Response: The 43 CFR 3809 regulations have always had performance standards. The current regulations' standards are outlined in 43 CFR 3809.2 and 43 CFR 3809.3. These standards have been expanded with BLM policy changes directed under BLM instructional memorandums (IMs). Some of these changes include the BLM cyanide management policy and the acid rock drainage policy. The Proposed Action would take the current policy standards and incorporate them into the regulations. The proposed final regulations also include more standards and definitions in the "unnecessary or undue degradation" clause.

21.17 **Comment:** The assumptions analysis in the EIS was conducted by the Regulation and the EIS teams. We question the overall experience of the teams with mining issues.

Response: The EIS team members who developed the analysis in the EIS are listed in Chapter 4. In response to public comments, more-detailed information on team member qualifications has been added to this list.

21.18 **Comment:** We believe an improved approach to developing the final preferred alternative offers great promise in solving current shortcomings. One such model was developed by the Technical Advisory Committee (TAC) for Mining, which assisted Forest Service Regions 1 and 4 from 1989 to 1993. This model provided for contingency alternatives that would be considered and approved as part of the NEPA process and made part of the approved Plan of Operations. The concept was to anticipate potential problem areas and plan an effective response by both the operator and agency. The approach described can meet the needs of BLM in this area in a more efficient and predictable manner than the awkward and cumbersome approach included in the proposed rule.

Response: This approach can be used with the current and proposed final regulations. The proposed final rule does not dictate how industry and BLM would develop Plans of Operations. It states only the general information needed to complete the review of the proposed operation and the standards the operation must meet during and at the end of the operation. Any contingency alternatives should be a part of the National Environmental Policy Act (NEPA) process and are highly recommended by BLM and the Council on Environmental Quality.

21.19 **Comment:** Data by state and by year would be helpful in determining whether most of the violations are in only a few BLM districts or states. Such data would be useful in implementing National Research Council (NRC 1999) study Recommendations 11, 15, and 16. The Department of the Interior (DOI) needs to explain how the proposed

regulations will increase, decrease, or have no effect on the average number of noncompliance orders. The number of annual outstanding noncompliance orders is a measure of the effectiveness or ineffectiveness of the existing regulations and can be used to see what would happen under each alternative. Another meaningful measure is whether there are repeated violations for the same mining operation or owner/operator. The lack of these data and the number of reclaimed acres are yet another example of the failure of the draft EIS to objectively provide information to meaningfully evaluate and comment on and compare the effectiveness of the proposed regulations versus the existing regulations. This is a fatal flaw in the NEPA process. These data are extremely important to verify the DOI assertion that the current Notice-level work at an average of about 1.5 to 2.4 acres of disturbance per activity is “unreclaimed” and is causing significant environmental damage, i.e. unnecessary or undue degradation. There is a significant difference in the speculated total of 31,050 to 49,680 acres unreclaimed here versus not more than the total of 650 “unreclaimed” acres from all Notice-level mining operations since 1981 in the NRC study.

Response: We received BLM data for this EIS under a general information request from each state and/or from the public land records. But our data request did not include information on who received notices of noncompliance. Your suggestion on using the notice of noncompliance information for analysis, though, was outlined in the draft EIS under each alternative. Notices of noncompliance are typically preceded by several visits or letters from BLM outlining the potential problem before a notice of noncompliance is issued. Once operators receive such notices, they have a certain period of time to take corrective actions. The EIS team members have found that some operators get more than their fair share of notices of noncompliance but that in general most companies usually handle the potential concern before BLM issues a notice of noncompliance. We expect this type of interaction and compliance to continue.

Also, please note that we cannot find where you came up with the figure of 31,050 to 49,680 acres under Notice level activity in noncompliance that were left unreclaimed. Table 3-6 of the draft EIS showed that there were currently 181 unresolved or outstanding notices of noncompliance for Notice-level operations. Even at an average disturbance of 2.4 acres per Notice, this amount would represent no more than 436 acres left unreclaimed, which is very close to the figure referenced in the NRC report.

- 21.20 **Comment:** The Mining Law limits the amount of waste a mine on public land can produce to no more than can fit on 5 acres of a mill site and up to 20 acres of the claim itself, not including the ore body. Current regulations ignore this clear provision of the law and need to be revised to conform to the law.

Response: This is not an issue addressed in the draft EIS and is outside the scope of this rulemaking process. The 3809 regulations are for the surface management of operations conducted under the Mining Law. If the operator has a legitimate and valid right to conduct the activity under the Mining Law, then the regulations are applied to make sure

the operation does not result in unnecessary or undue degradation. BLM has not added anything in the final rules on millsite determinations. But operators that are not conducting operations under the Mining Law are subject to other BLM land use regulations. Such situations would have to be evaluated on a case-by-case basis according to BLM policy.

- 21.21 **Comment:** Page 89 of the draft EIS says that “timely resolution” of noncompliance is “difficult.” This assertion is biased and unsupported by the data in Tables 3-1 through 3.6. This bias and lack of meaningful data then become an anecdotal and perhaps incorrect basis for National Research Council Recommendation 1.

Response: If an operator is unwilling or unable to fulfill the requirements of reclamation under a Plan or a Notice, the process of reaching compliance can take a long time. Under the current regulations the operators of Notice-level operations do not have to submit bond. If such operators do not reclaim the surface disturbance, BLM follows the current noncompliance process. This process requires BLM to try to get the operator to complete the reclamation before issuing a notice of noncompliance. Once the notice of noncompliance is issued, the operator has a certain period of time to rectify the concerns. If the operator still does not comply, the case must go to the Department of Justice for review. If the workload of the Justice Department is small, it can then take the case to federal court. This is a long process and very difficult. Table 3-6 of the draft EIS shows the instances of active noncompliance. All these are held up, and no reclamation is being completed. These unreclaimed Notice- and Plan-level operations constitute unnecessary or undue degradation of public lands.

- 21.22 **Comment:** Page 90 of the draft EIS asserts that data from the “recent past” suggests that there will be an annual average of 55 noncompliance orders issued for Notice-level operations and two for Plan-level operations. But the draft EIS contains no information supporting that prediction. Specifically, the draft EIS does not show the basis for predicting the number of mining operations on public lands over the next 20 years or the reasons the number of annual violations would be significantly about double the record over the almost 2 decades that the existing 3809 regulations have been in effect.

Response: The number of Notices, Plans of Operations, and notices of noncompliance for the draft EIS were projections of an average/year basis from the past 17 years into the future for 20 years. The assumption for analysis stated that we expect the level of activity to remain the same as during the past 17 years since the 3809 regulations were first adopted. For the other alternatives we described the impact of the regulations as a percentage of loss of or gain in activity. These numbers may be way too high or low but were developed to help in the analysis of the proposed regulations and the alternatives. The assumptions for analysis in Appendix E did assume that public lands would remain open to mineral activities.

21.23 **Comment:** As stated on page 209 of the draft EIS, BLM feels that due to the wide variety of mining and milling methods, representation of the variations in one programmatic study would be difficult, and therefore describe only “typical” operations within the study “model.” We feel that BLM has chosen the description for mining operations that is most suited to the agenda of the proposed 3809 regulations, and through an explanation of perceived difficulty, has designed a model that excludes underground mining within the scope of affect and costs of the proposed regulations.

Response: We developed the mine models to describe the basic operations to be affected by these alternatives. We tried to establish basic areas where operators would feel a change in regulations. But in response to public comments, we expanded the mine model types to include an underground mine model.

21.24 **Comment:** Table 2-3, Summary of Impacts by Alternative, is either incomplete or misleading in acres disturbed per year. If these numbers represent the gross number of acres disturbed per year, the table appears to be based on the assumption that there will be no corresponding reclamation, because the table has no entry to offset the number of acres disturbed per year. If so, that assumption is unfair because reclamation is required under each of the alternatives BLM is considering. If the numbers in the table represent a net number of acres disturbed per year, the draft EIS does not make that clear.

Response: The numbers in the table are estimated operations that could occur on public lands under each alternative. The numbers are estimates based on the change of mineral activity for each alternative presented in Appendix E. Chapter 3 outlines the potential amount of reclamation and the acres not reclaimed. BLM assumes that reclamation will take place and that a series of disturbed lands will be reclaimed but waiting for BLM’s final release.

21.25 **Comment:** Table 2-3 of the draft EIS ignores Department of the Interior data reporting that 97% of all Notice- and 96% of all Plan-level mining operations have been in full compliance with the existing 3809 regulations and that more than 90% of all incidences of noncompliance are satisfactorily resolved in a timely manner. The National Research Council study reports that a total of only 650 acres are still unsatisfactorily reclaimed out of more than 20,700 Notice-level operations between 1981 and 1998.

Response: Table 2-3 shows by alternative the estimated number of operations expected in response to the change of mineral activities. For a discussion of the notice of noncompliance issues, please see Chapter 3, Mineral Resources.

21.26 **Comment:** BLM must revise Table 2-3 because is not correctly paginated. No reference for this table is provided no explanation of how the information in the table was derived. The validity of the data in the table cannot be verified until an explanation is provided, but the table appears highly misleading. For example, the table describes the impact of

implementing Alternative 3 as a 1% decrease in mining. Since Alternative 3 includes pit backfilling as a reclamation requirement, the impacts will be much higher. We estimate that implementing pit backfilling alone will result in substantially more than a 5% decrease in mining. Table 2-3 must be re-done accurately and with references and methodology provided to the reader.

Response: Table 2-3 is a summary of the impacts based on the alternatives presented in Chapter 3. The numbers in the table are estimated operations that could occur on public lands expected under each alternative. The numbers are estimates based on the change of mineral activity for each alternative presented in Appendix E. The rationale and the explanation of the table can be found in greater detail in Chapter 3 and Appendix E.

21.27 **Comment:** Beginning on page 86 of the draft EIS, BLM discusses environmental consequences: “Under all alternatives compliance with environmental regulations represents a cost to the mining industry and affects the level of mineral exploration and mining. Included are costs of delays resulting from longer processing times . . .” and etc. BLM goes on to discuss Alternative 1: No Action, which is presented as being undesirable because of what BLM obviously considers to be “significant” failings under the current Notice and Plan of Operations system. The statistics and descriptions of the current system presented by BLM in the EIS, however, show that the current system is actually working quite well. By the yardstick BLM used to measure the impacts of BLM's preferred alternative, in fact, the current system can be seen to be far superior to that alternative: (1) “Notice provisions could be hard to enforce because no reclamation bond is required . . . The lack of a bond and enforcement process could result in areas not being reclaimed when operators leave, although this is not a common practice. BLM issued about 500 notices of noncompliance . . . for failure to reclaim, representing 2% of all Notices submitted. BLM field offices would continue to differ in their processing of Notices.” (2) The mere 2% noncompliance rate by itself, according to BLM, when viewing its own impact on mining, is insignificant. (3) But the draft EIS states on page 88 that 73% of all notices of noncompliance have been resolved. (4) This resolution rate reduces the 2% noncompliance for Notices to about ½ of 1%! (5) The situation for noncompliance under Plans of Operations is comparable.

Response: As stated in the draft EIS and your comment, the number of unresolved notices of noncompliance is small compared to the total number of mining operations. BLM's main concern is that some, though not many, of these Notice- and Plan-level operations can and have caused significant environmental damage. The second problem as stated in Chapter 3 is that it can and has taken BLM a long time to resolve these problems. During this time environmental damage may result that may be difficult to remediate or reclaim. BLM's main concern with notices of noncompliance is the length of time needed to resolve them. We expect to continue to find problems and concerns that need resolution in the field. Under the Proposed Action these problems and concerns would be resolved in a more timely manner.

21.28 **Comment:** It is apparent that neither BLM nor the National Academy of Sciences has given adequate consideration to the impact of the proposed regulations on locatable industrial minerals.

Response: Industrial minerals were recognized and analysis was completed in the draft EIS for industrial minerals. The main analysis for the change in mineral activity for industrial minerals is presented under strip mines in Appendix E. The strip mine model is an industrial mineral model, and the impacts to this type operation were discussed in the draft EIS.

21.29 **Comment:** Last April, Phelps Dodge Chairman and CEO Doug Yearly testified before Congress that in 13 months his company permitted a mine in Chile to the same environmental standards required in the United States, yet the Safford project is entering its fifth year of permitting efforts with no apparent end in sight. Despite what BLM maintains in the draft EIS, (page A-118, “Time is given no monetary value”), time is money. If you are a mining industry CEO, where do you invest your shareholder’s money?

Response: In the analysis of mineral impacts, Chapter 3 states that delays do cost the mineral industry money and any delays in permitting based on all of the coordination requirements also involve a loss of income. The section you quote is in the assumptions for analysis and was prepared only for developing the change of mineral activity.

21.30 **Comment:** I’d also like to refer to page 95, the last paragraph: “From these assumptions, an estimated 1,150 Notices and 190 Plans of Operations would be filed each year under the Proposed Action. Over a 20- year period, 23,000 Notices and 3,800 Plans of Operations would be filed.” I can’t imagine where these figures have come from.

Response: The numbers represent an estimate of the number of Notices and Plans of Operations that could be received during the year and in a 20 year period under Alternative 3. The estimate was derived from the change in mineral activity, Appendix E, based on the average number of Notices and Plans received during the last 17 years. These numbers have been changed for the final EIS. For the final EIS we have taken the average for the last 3 years for the numbers of Notices and Plans, and in response to public comments and changes in the alternatives, we developed new mineral activity numbers.

21.31 **Comment:** The draft EIS significantly underplays the impact to “small miners” with the assertion that the proposed regulations would only be a “minor negative.”

Response: The final EIS has been changed to show that the affects to small miners and exploration. The change in mineral activity, Appendix E, has increased for small mining and exploration projects that go from a Notice to a Plan of Operations.

HAZARDOUS MATERIALS AND WASTE MANAGEMENT

22.01 **Comment:** Many other significant changes are occurring in environmental regulatory programs, none of which were factored into BLM's cumulative impact analysis. For example, on May 1, 1997, EPA published a final rule that expands the Toxic Release Inventory reporting program under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) to add, among other industrial groups, metal mining. Reporting requirements are extensive, and initial reports are due by July 1, 1999. On another waste management issue, EPA published land disposal restrictions for mineral processing wastes in May 1998. These restrictions include, among other things, treatment standards based on the performance of best demonstrated available technologies. See 63 Fed. Reg. 28556 (May 26, 1998). The draft EIS includes a section on waste management and reporting requirements (pages 98-101) but does not discuss or analyze the significant changes to the Resource Conservation and Recovery Act (RCRA) and EPCRA programs in the context of the 3809 proposed revisions.

Response: Your comment has been incorporated into the final EIS under baseline information.

22.02 **Comment:** For hazardous materials under the Proposed Action, and I have to warn you, this is a correct quote, "Mining under the Proposed Action might not contaminate soils and sludges in tailings, leach ponds, and leach pads." Now, I can only assume that BLM means it won't contaminate soils under these facilities.

Response: Your comment is correct. The issue is that the tailings, leach piles, and waste rock could contaminate the soils under and around these facilities. Under the current regulations these potentially contaminated soils may not be cleaned up with potential risk reviewed. Under the proposed regulations BLM would have the responsibility to ensure cleanup if the risk-based analysis finds the material to be an environmental concern.

22.03 **Comment:** Nothing in this draft EIS seems to talk about this notion of risk management or how you look at a particular situation when a mine is proposed that on the face of it seems to be pretty innocuous, but ultimately years down the road there's some real major risks, some real major losses that could be associated with that mine.

Response: Risk management for operations should be handled during the NEPA process to allow the decision maker to determine if any mitigation is needed for the mineral operation.

22.04 **Comment:** The draft EIS has assumed a "could affect" consequence for the No Action Alternative and a "might not" consequence for the Proposed Action, and the total extent of analysis in the Proposed Action section—one four-sentence paragraph—contains absolutely no justification as to how or why the Proposed Action, a regulatory change,

would alter current law, which was the source of the concern expressed in the analysis of the No Action Alternative.

Response: The existing regulations are silent on BLM's ability to require characterization of tailings and other mine waste to ensure they are handled properly. Under the proposed final regulations BLM would have the clear ability to request classification of the waste and risk assessment of the material to determine the proper disposal method.

22.05 **Comment:** Eliminate the loophole that would allow expanded mine waste dumps on public lands. Miners are using the 1872 Mining Law provision to allow land for millsites as part of their legal mineral claim allowance. No more illegal mine dumps!

Response: This issue is outside the scope of this rule making and is not examined in this final EIS.

CLIMATE AND AIR QUALITY

23.01 **Comment:** The EIS claims that “mineral development does not affect climate” (page 102). This is not correct. Mineral development leads directly to global warming through the use of the product. Mineral development leads to industrial development, which leads directly to the emissions, which cause global warming. An EIS considering the impacts of mineral development nationally should consider the linkage between industrial development and climate change.

Response: The final EIS has been revised to state “Although locatable mineral development would not significantly affect climate, it is appropriate to examine the impact of climate on postmining vegetation reclamation (McKee and others 1981).”

Atmospheric scientists have reported that the average global surface air temperature rose 1° Fahrenheit during the 20th century (nearly half of this increase during and after 1970). At the same time carbon dioxide (CO₂) concentrations have increased by 30% above preindustrial levels. Assuming CO₂ concentrations continue to increase at their present rate (representing a doubling of concentration by the next century), current global circulation models predict a 4.5 to 11° Fahrenheit increase in average U.S. surface air temperatures. The major current and expected future sources of global CO₂ emissions are the burning of fossil fuels (including leasable minerals such as coal, oil, and natural gas) for energy systems and transportation and the burning of forests to clear lands.

Concentrations of other gasses are also increasing in the atmosphere and could contribute to climate change, although less significantly than CO₂. These gasses include the following:

- Methane (mostly from agriculture and energy systems).
- Oxides of nitrogen (transportation, industrial and energy system sources).
- Halocarbons (refrigeration and industrial sources).
- Ground-based ozone (transportation and industrial sources).

In addition, future improvements in the global circulation models should account for potential cooling due to reflection of incoming solar radiation by increased cloud cover and fine particulate matter.

As stated in the draft EIS on page 104, “No specific provisions in the regulations would directly affect the amount and type of impacts to air quality under the four alternatives. Impacts to air quality would result from secondary effects of the regulations on the amount and type of mining activity.” Finally, emissions of CO₂ (and other potential “climate change” pollutants) would not be significant from expected locatable mineral operations.

23.02 **Comment:** Figure 3-1 shows Class 1 source areas but is grossly out of date. Wilderness

areas are Class 1 and there have been many updates to the Nation's wilderness inventory since 1979.

Response: Figure 3-1 shows the mandatory PSD class I areas in the West established by the U.S. Congress on August 7, 1977, which also provided a mechanism by which each applicable air quality regulatory agency could establish additional federal PSD class I areas. But only five specific tribal governments have conducted such PSD class I area redesignations since 1977. Of the nearly 625 current wilderness areas, only 120 are mandatory PSD class I areas. Figure 3-1 has been revised to include all five tribal class I areas and more detailed class I area boundaries.

- 23.03 **Comment:** Another mine near my house has unleashed heavy metals and sends obnoxious plumes over many houses on windy days, which are very common. I'm appalled by the results from most mining operations and the fact that federal regulations and enforcement are inadequate to repair the damage they cause.

Response: As stated in the draft EIS on page 104, "As required by the Federal Land Policy Management Act and the Clean Air Act, BLM cannot conduct or approve any activity that does not comply with all local, state, tribal, or federal air quality laws, rules, standards, and implementation plans." BLM's approval of Plans of Operation obligates mineral operators to comply with these requirements. Failure to do so can lead to a notice of noncompliance or other actions. Please contact your local BLM office to determine if unauthorized activities are occurring in your specific situation.

- 23.04 **Comment:** Biological resources baseline studies should be prepared by BLM technical staff or independent contractors that answer to BLM, paid for by operator/applicant fees paid to BLM. Indeed, what wildlife or birdlife find the dust and roar of the ever deepening open pits or to wering steep sloped waste rock and cyanide laced heap leach piles a hospitable environment for any purposes? When it comes to wildlife, including the Endangered Species Act listed threatened and endangered species, why do BLM and U.S. Fish and Wildlife Service always seem to ignore cumulative impacts and reflect what Leshy referred to as "BLM's historic tenderness toward the mining industry?" Having observed the incredible dust and air pollution when mine operations were unaware they were being observed, one cannot help but question what the increasing burden of dust depositional buildup on nearby desert vegetation in areas of scant rainfall means to the quality of forage for wildlife and for vegetative productivity, which also affects abundance of forage for wildlife. This may be partially significant for smaller wildlife, which is unable to relocate away from the mine site, either physically due to small size or because the surrounding habitat is already fully occupied given the forage constraints of extremely arid locations. For example, in Imperial County rainfall varies from 0 to 3 or 4 inches a year.

Response: As stated in the draft EIS (Page 104), "As required by the Federal Land Policy Management Act and the Clean Air Act, BLM cannot conduct or approve any

activity that does not comply with all local, state, tribal, or federal air quality laws, rules, standards, and implementation plans.” BLM’s approval of Plans of Operation obligates mineral operators to comply with these requirements. Failure to do so can lead to a notice of noncompliance or other actions. Please contact your local BLM office to determine if unauthorized activities are occurring in your specific situation.

- 23.05 **Comment:** The Department of the Interior has not demonstrated how air quality will be improved so long as state and federal air quality standards are met. The presumption that each alternative has a different number of mining operations is moot since the evaluative factor remains meeting air quality standards. This is yet another example of inaccurate and biased assumptions by the Department of the Interior in its rush to release the proposed regulations, DEIS and December 22, 1998 analyses.

Response: As stated in the draft EIS on page 104, “As required by the Federal Land Policy Management Act and the Clean Air Act, BLM cannot conduct or approve any activity that does not comply with all local, state, tribal, or federal air quality laws, rules, standards, and implementation plans” and “Although the precise air quality impact from mining cannot be measured now, these procedures would assure that BLM-authorized practices conform to all air quality requirements.”

BLM uses scientifically and legally determined air pollutant concentration values as the levels of potential significant impact. As these air quality limitations are made more stringent (as has occurred several times since the original Clean Air Act was passed in 1955), air quality will improve. Finally, all five alternatives would result in a proportional increase or decrease in air quality, depending on the expected increase or decrease of overall mineral development. A more quantified assessment is not possible until mining development plans are submitted for BLM review.

WATER RESOURCES

24.01 **Comment:** The final EIS should contain a brief discussion of typical state water quality standards. Although each state establishes its own water quality standards, states generally have comparable water quality standards programs and have adopted EPAs Gold Book (EPA 1986) water quality criteria as the basic standards for all stream segments designed for aquatic life. BLM clearly is required to prevent the development of such a lake, to prevent contaminated pit lakes and evaporation wastage, even based on its current regulations.

Response: A comparison of all the state water quality standards would result in a very lengthy discussion and is beyond the scope of the EIS. Even including typical state standards would be difficult because of the variety and differences between ground water and surface water standards. Although the EPA Gold Book is used for recommendations for aquatic organisms, the process of setting standards is ongoing. Several final criteria documents were released over the past 10 years, and others are scheduled for release in the next few years. Every state might not adopt all the criteria, or they may modify them.

The development and evolution of pit lakes are of concern to BLM. These proposed final regulations are designed to help avoid future environmental problems when pit lakes form. All pit lakes are not highly polluted. In fact, some pit lakes have good water quality. Each mine has different geologic conditions that alter the geochemical conditions when a pit lake forms. Each site must be assessed individually for expected geochemical reactions and final pit lake quality. Long-term monitoring of the pit lake water quality can be required, and site specific mitigation measures will be used as needed.

24.02 **Comment:** The draft EIS does not discuss Alaska under “Regional Hydrogeology” and related water resource impacts. Because the proposed regulations will apply to all public lands in Alaska, the state with the reported largest amount of public lands, the impacts on this resource are incomplete and the draft EIS fatally flawed. The existing discussion is also inaccurate on page 117 where it ignores the existing zero discharge requirements from placer mining operations without a specific water quality discharge permit that requires compliance with state water quality standards.

Response: We acknowledge the omission and have added some information on the water resources of Alaska and on discharge requirements for placer mining. The zero discharge rule refers to the requirement that sediment cannot be transported further than 500 feet downstream in placer mining. For small suction dredges, recent studies suggest that this requirement has not generally been a problem. With other kinds of placer mining (as with use of mechanized equipment (so-called “cat mining”) sediment transport goes beyond the 500-foot limit, causing substantial environmental impacts (Day 1999).

24.03 **Comment:** There are water-quality and water-quantity impacts at today’s mines,

especially, where multiple mines are being operated in states like Nevada. Some of these include: Dewatering discharges to surface waters may increase concentrations and loads of metals and trace elements above background levels. There are issues of long-term treatment, remediation, closure, and cleanup. The final rule should do more to protect water quality before mining is allowed to begin, including conducting sound hydrological studies, obtaining baseline water quality sampling, and requiring repeated water quality monitoring during the mine's operation. Many will have to be monitored for decades, raising issues of cost and the risk of perpetual treatment.

Response: The potential impacts of developing a mine are analyzed in site-specific environmental documents in accord with the National Environmental Policy Act. Plans of Operations will conform to all state and federal regulations such as the Migratory Bird Act, which mandates that measures be taken to protect birds. BLM agrees that the mine design and operation should focus on pollution prevention measures and treatment should be relied upon only after all reasonable sources and mitigation control methods have been employed.

- 24.04 **Comment:** That the definition specifies “surface disturbance” may allow some to argue that impacts on ground water resources do not represent “unnecessary or undue degradation.” Impacts that may not occur until after mining ceases are even more difficult for the agency to consider. But the impacts of drawdown caused by dewatering and pit refill clearly affect surface water and land. For example, drawdown has already caused sinkholes to form in Maggie Creek. It has caused springs to dry. If the flow in any stream is substantially reduced, the riparian vegetation may dry up, which is also a surface impact. This is clearly a surface disturbance.

Response: Surface disturbance consists of any physical, chemical, or biological disturbance of surface and subsurface resources. The provision to prevent unnecessary or undue degradation includes protecting both ground and surface water. Contamination of ground water could be considered unnecessary or undue. The site-specific NEPA analysis for an operation would disclose potential impacts to ground water and mitigating measures to prevent undue and unnecessary degradation.

- 24.05 **Comment:** Alternative 3 (Proposed Action) projects that “impacts would continue from dewatering. Some springs would be lost. Some streams would dry up.” Alternative 4, on the other hand, foresees the potential for improvement of water quality.

Response: Dewatering is a necessary component of open pit mining. Its effects are temporary because water levels eventually return to premining levels. It, might, however, take decades or more for this to occur. The level of impacts from dewatering could be the same under all alternatives and would be determined under the environmental documentation. Under Alternative 4, backfilling of pits could improve environmental conditions by preventing the formation of pit lakes.

24.06 **Comment:** The cumulative impacts of mining are rarely considered, although the National Environmental Policy Act (NEPA) requires such consideration.

Response: Compliance with NEPA requires that direct, indirect, and cumulative impacts be addressed in BLM's environmental documents disclosing impacts of proposed mineral activities (federal actions) on public lands. Federal agencies have and will continue to struggle with the proper scope and analysis in preparing cumulative effects analyses. Provisions in Alternatives 3 and 4, however, provide for greater assurance that adequate baseline information is collected and studies are conducted to address cumulative impacts. In contrast, mineral activities under Alternative 2 would no longer be considered federal actions and would no longer be subject to NEPA analysis.

24.07 **Comment:** Page 138, Riparian-Wetland Resources-Ground Water Drawdown. BLM's discussion of dewatering and the potential impacts of ground water drawdown on surface waters and nearby wetlands is wrong and incomplete. The panel discussion of the National Academy of Sciences' Committee on Hardrock Mining on Federal Lands (April 21, 1999) summarized regulatory requirements managing mine dewatering and the impacts of dewatering. Nevada State Engineer Michael Turnipseed described the measures that had been taken and the authority that his office had to address water quality impacts. BLM's proposed 3809 regulations would also insert BLM into water quality and water allocation decisions that fall exclusively within the jurisdiction of the states. See Proposed 3809.420(b)(2). The National Academy of Sciences Committee considered authority over water quantity decisions and made no recommendation that the current laws or regulations be changed (NRC 1999, page 53). BLM's proposed performance standards for water use and water quantity should be deleted from the proposed rule.

Response: §3809.420(b)(2) in the proposed regulations, simply states, in part, BLM's preference for avoiding impacts from occurring rather than in trying to mitigate the impacts after they occur. These regulations would not affect the allocation of water rights, which is reserved to the states.

24.08 **Comment:** The draft EIS states "At the Betze Pit Mine (gold) north of Elko, Nevada, peak dewatering rates of slightly more than 100,000 gallons per minute (gpm) are expected." The figure cited by BLM is too high. Peak dewatering rates do not exceed 70,000 gpm, and, in the near future, the rates are expected to decline to about 30,000 gpm.

Response: The figure should have been expressed in acre-feet/year, not gpm. We have changed the figure in the final EIS.

24.09 **Comment:** Water Resources. This analysis of impacts is fairly cursory. We suggest that you provide more information about deficits being created. For example, while acknowledging that drawdown cones extend for a few miles and documenting a few high

pumping rates, it is essential to talk about the long-term debt that must be repaid. The drawdown cone has a volume which must be filled when dewatering ceases. As the cone refills, its extent continues to expand sometimes for several decades into the future. The pit lake itself also represents a large debt that did not exist before mining. Unfortunately, the EIS, including the alternatives discussion, treats this issue as one merely of water quality. There needs to be a discussion on monitoring because it is primarily water resources, both quantity and quality, that are monitored.

Response: We have added text to the final EIS to describe the impacts of dewatering.

- 24.10 **Comment:** Water Resources, Affected Environment, Impact of Mineral Activity on Water Resources, Dewatering, pages 111 - 112. The section on dewatering should explain the effects on hydrology and other water-related factors when pumping stops. We recommend that the section on effects on springs explain that in some portions of the arid West a spring may be the only source of water for wildlife for many miles and, therefore, loss of the spring may harm the wildlife it had supported. Furthermore, many springs in arid environments, particularly in Nevada, contain endemic species of invertebrates such as spring snails. Modifying the hydrology of the spring may result in the loss of the species. Many such invertebrate species are just becoming known to biologists, and in many cases no measures have been developed to protect them.

Response: We have added text to the final EIS to describe the impacts of dewatering.

- 24.11 **Comment:** BLM cannot rightfully assert that pit lakes are not comprehensively regulated under existing programs. The draft EIS analysis is inaccurate.

Response: In water resources, Alternative 2, State Management, the draft EIS states that mine operators will have to comply with an evolving set of state standards and regulations that may be more restrictive to mining if states adopt prescriptive standards. The regulation of pit lakes can vary from state to state depending on the focus of state mining regulations on water quality of pit lakes. Some states will adopt more detailed regulatory standards than others.

- 24.12 **Comment:** Pit lake water should never be allowed at any stage to exceed acute toxicity standards for wildlife. Operators should not depend on source control for water after 20 years of closure.

Response: BLM prefers source control to avoid pit water quality problems before they start rather than having to require expensive, long-term water treatment afterwards. Toxicity of pit water to wildlife is now regulated by a variety of federal and state laws. The Migratory Bird Act, for example, requires that pit lakes meet standards to protect birds covered by the Act. NEPA documents for site-specific Plans of Operations would require that pit water quality be assessed if pit lakes were likely to form, as well as,

provide a risk assessment of potential affects and mitigation for wildlife species that may come into contact with the pit water.

- 24.13 **Comment:** The quality of water in the pit lakes depends on the source of water refilling them. The mining companies and BLM predict this quality using complicated geochemistry models. But the models depend on the quality of hydrologic data, predictions of the inflow to the pit. I performed basic sensitivity analysis of the pit lake inflow at the Pipeline Deposit mine and showed that very reasonable assumptions of the geology near the pit led to estimates of inflow that caused the refill time to vary from 8 to more than 100 years. BLM predicted an inflow rate of 12 years, which was used to model the chemistry in the pit. My assumptions involved increasing the complexity of the geology as represented in the model to test the simplifying assumptions used by BLM. In other words, I more accurately characterized the system to show the major problems with the predictions. The bottom line is that the predictions are rather useless. Fourth, the pit lakes will evaporate water in perpetuity. This represents a permanent loss of water from the flow in local basins. For example, the Pipeline Pit, at full development after the several piecemealed expansions are complete, will evaporate well over 1400 acre-feet/year while recharge to the entire Crescent Valley is less than 14,000 acre-feet/year. This is 10% of the total recharge in the valley.

Response: The long-term evaporative losses from pit lakes are considered a significant residual adverse impact. The loss of ground water due to evaporation losses from pit lakes is somewhat offset by decreased loss of ground water from evapotranspiration due to the lowered ground water levels resulting from dewatering the aquifer. Evapotranspiration losses will be decreased from premining levels until the ground water system returns to near premining water levels. Evaporative losses from a pit lake may be treated as a consumptive use and accounted as a water right. In some cases, water rights have been purchased and the water use for that certificated water right (i.e. agriculture) retired. This purchase and retirement of rights could result in a zero net increase in consumptive water use in the basin, when evaporative losses are compared to the evapotranspiration losses due to agricultural use. Another factor in computing a water budget is the estimate of recharge, which can vary, depending on the method used.

- 24.14 **Comment:** Please define what you mean by surface water. Are you talking about water flowing off the project or water wholly contained in the project area?

Response: Surface water refers to all surface water that flows on and near the project site and must be controlled as runoff from the project boundary or run-on, preventing water from entering the project boundary from outside sources.

- 24.15 **Comment:** Page 116, Water Resources: The following statement is wrong: “Leachates that may percolate downward to ground water, such as by leakage from a tailings impoundment, are not regulated by the Clean Water Act, except as this water may

contaminate surface water by emerging at springs and seeps. (National Research Council 1979).” The statement ignores state standards, and BLM chose not to use readily available information addressing this issue. In addition, the statement cites to a source that is 20 years old.

Response: The Clean Water Act (CWA) did not include ground water in its definition of “navigable waters” even though the term “navigable waters” includes “waters of the United States.” An early (1977) court case upheld that the Clean Water Act did not include ground water in its protections. But two later court cases have broadly interpreted the language in the act to include tributary ground water, one in 1979 and the other in 1994. This is a change in interpretation of the act brought about by court cases involving specific situations, not legislative reform. Case law is still evolving on this issue (see Cavanaugh 1998).

- 24.16 **Comment:** Metal precipitates are highly mobile and can be carried long distances in streams. Metals in this solid phase have been associated with reduced density and diversity of aquatic invertebrates and food chain contamination in areas removed (>25 km) from the contamination source. Metal-contaminated diets have been found to cause reduced growth, histopathological effects, and reduced survival of trout. Exposure to metals in the diet have caused greater adverse effects to trout than exposure to metals in solution.

Response: The draft EIS discusses the process for setting ambient water quality standards for fish and other aquatic life. See the Environmental Consequences section for Water Resources.

- 24.17 **Comment:** Water Resources, Affected Environment, Impact of Mineral Activity on Water Resources, Tailings Impoundments, page 115. The section on tailings impoundments should describe the length of time that impoundment liners are designed to protect water resources and the extent to which they are effective over the long term.

Response: Designs for tailings impoundments and liner life will continue to depend on the site-specific geotechnical information of the site, mine life, and the resources including groundwater that need protection. Present-day designs for tailings impoundments for precious metal mines have evolved significantly from the simple designs built when the 3809 regulations were first implemented. Typically, these designs now combine double liners, sophisticated leak detection systems, and systems in place to remove solutions and hydrostatic head on the liners. These factors are evaluated more suitably at the mine plan phase rather than in this EIS.

- 24.18 **Comment:** [3809.5] Define the term “other leachate” requiring warning signs as discussed in Table 2-1 of the draft EIS.

Response: Other leachate is leachate that contains other toxic chemicals or other acids, (such as sulfuric acid), or high concentrations of contaminants that may pose a risk to human health.

- 24.19 **Comment:** These regulations should encourage the collection of more data to better characterize hydrogeologic conditions at the mine site during exploration.

Response: The Proposed Action would strengthen BLM's ability to require the collecting of environmental (hydrogeology, surface water) data early in the process to help provide a baseline and design information so that unnecessary or undue degradation does not occur.

- 24.20 **Comment:** I'm not sure how to fit them in the regs, but if it's possible, the regulations should encourage the establishing of observation wells. For example, ground water models are much better if they can be calibrated with several years of water-level information.

Response: Observation wells can be required where deemed necessary by BLM. The proposed rules will not change that, but the number of wells required may be greater under the proposed regulations than would have been required before the revisions, depending on monitoring requirements at the mine. Each site will be assessed for the need for types of monitoring.

- 24.21 **Comment:** Water Resources—Alternatives 3 and 4. BLM's discussion of the water quality benefits arising out of the proposed regulatory changes is abrupt, conclusory, and speculative. BLM fails to provide any analysis or supporting references. These regulations are duplicative of every other federal and state water quality law, regulation and program at every mining site in the west.

Response: The water quality benefits are based on the expected outcomes of the proposed regulatory changes. BLM determined these outcomes using information from several sources, including experience from existing mining operations in a variety of geologic settings. While developing alternatives, BLM reviewed several state programs as well as its own procedures and notices of noncompliance. The revised regulations will improve environmental controls where gaps previously existed. The duplication of regulatory programs in the states will be minimal because these revised regulations do not set up a new layer of regulatory function that would duplicate the states' existing rules. The regulations merely enhance the program already in place.

- 24.22 **Comment:** The discussion on water quality standards (Water Resources, Environmental Consequences section on pages 117-121) needs to be expanded to include water quality standards that protect the environment for fish and other aquatic life which often have a much lower threshold tolerance than humans to the common metals and pollutants at hardrock mining sites.

Response: A discussion of the process for setting ambient water quality standards for fish and other aquatic life has been included in the revised text. (See the Environmental Consequences section for Water Resources.) A listing of all the ambient water quality standards for fish and other aquatic life would be voluminous and not practical for including in an EIS. You can review the standards in the so-called EPA “gold book” (EPA 1986), which consists of the ambient water quality guidelines published in 1986.

- 24.23 **Comment:** Water Resources, Environmental Consequences, Alternative 2: State Management and Alternative 4: Maximum Protection, pages 119-121. A cumulative effects analysis should be provided for alternatives 2 and 4. The cumulative effects analysis should include the indirect effects of agricultural, livestock grazing, and other activities on surface and ground water resources affected by mining.

Response: The indirect effects of other uses on ground water is considered to be minimal. Water for livestock is pumped at low rates, and the effects of pumping on water levels away from the well are either very small or nonexistent. Agricultural uses pump larger amounts of ground water, but some of it percolates into the aquifer as recharge. Water levels can decline due to agricultural pumping, but this water use is often seasonal and has no long-term impact to ground water resources. The consumptive use of water by agriculture will not increase as a result of these regulations. The discharge of water from mine dewatering into existing streams often provides more surface water for irrigation diversions. These discharges augment the flow of an existing stream and provide for irrigation diversions downstream.

- 24.24 **Comment:** Water Resources, Environmental Consequences, Alternative 1: No Action, Water Quality, Spills, page 119. Spills such as those from tailings impoundments do not always have short-term impacts. See the following reference.

Response: Although spills are remediated, some could have long-term consequences for long-term cleanup costs. The text has been modified to explain such situations. Such a release would normally be covered by the Resource Conservation and Recovery Act or the Clean Water Act, depending on the situation.

- 24.25 **Comment:** Water Resources, Environmental Consequences, Alternative 1: No Action, Cumulative Impacts, page 119. Please explain how “new mineral activity in historically degraded areas” could improve water quality.

Response: New mineral activity could improve water quality when old tailings are reworked to extract economic ore grade values left unprocessed by previous operators because of limitations of then-current technology. The improvement would result from eliminating the source of contamination when an old tailings pile is reprocessed and measures are taken to prevent runoff, leachate production, etc. after the reprocessing.

These measures include recontouring the tailings to blend into the landscape and placing a soil cap and planting vegetation.

- 24.26 **Comment:** Environmental Consequences, Water Quality, Alternative 4: Maximum Protection. Restricting water treatment to no more than 20 years does not provide maximum protection where a mine continues to generate acid rock drainage (ARD) beyond the 20-year time frame. Experience has shown that once ARD begins, it can continue for hundreds of years. The only real way to provide protection from ARD is to require that the company pay to treat any residual ARD in perpetuity or until ARD is no longer being generated. The requirement to bond for perpetual water treatment is much more of an incentive to prevent or limit ARD than a 20-year dead line to eliminate the drainage. An adequate bond will cover contingencies in case ARD develops unexpectedly or if the control measures are not completely successful. Without bonding for continuing water treatment, Superfund is our only real option for protecting the environment from ARD.

Response: The intent of Alternative 4 is not to stop providing for water treatment after 20 years, but not to *approve* in the first place operations that may need water treatment beyond 20 years. The point is that an ARD problem requiring treatment in perpetuity constitutes a greater overall environmental threat than one that can be resolved in 20 years or less. The operator would remain liable for providing treatment regardless of how long it is needed, but restricting development of mines to those treatable within 20 years would avoid the impacts from the worst ARD sites.

- 24.27 **Comment:** For the issue of fisheries and rivers being harmed by dredging, please see the study by U.S. Geological Survey (USGS) research geologist Warren Day. This study last year showed that the water quality on the Fortymile River, a beautiful, wild, and scenic river in the remote part of the east-central Alaska, was not harmed by gold placer mining. And some of these operations were not casual use.

Response: The USGS study showed that 8- and 10-inch suction dredges did not adversely affect downstream turbidity. The study did not include aquatic biota, so conclusions cannot be drawn on the health of benthic organisms in rivers subject to suction dredging. The study also looked at so-called “cat mining,” which uses mechanized equipment to excavate gravels to expose the gold-bearing zone below. This type of mining was shown to increase turbidity and also is disruptive of riparian vegetation along the creek (Day1999). Other studies of Alaska rivers that have undergone placer mining have all shown decreases in riparian vegetation and increases in turbidity, water temperature, and suspended sediment (Dames & Moore and others 1986). All of these changes can harm fish and fish habitat. Water quality degradation as a singular component of placer mining with small suction dredges may not be occurring in all situations, but we need more studies on the effects of suction dredging on aquatic organisms. We think the characterization in the draft EIS of potential impacts to streams from placer mining is

accurate.

- 24.28 **Comment:** Not only must baseline hydrogeologic premining studies be made, but also there must be independent semi-annual or quarterly monitoring to determine if predictions of impacts of modern mining were accurate. Water resources are critically important in the arid West and thus necessitate the frequent monitoring for both quality and quantity, both on and off-site, including at more distant down-gradient sites and springs. These monitoring studies must include periodic monitoring of pit lake water quality and offsite down-gradient water quality. These data must be open for public review and there must be provisions (including financial) for review and analysis of the data by an independent third-party hydrologist or a BLM geologist. There must be provisions requiring long-term (50 year) onsite and offsite monitoring of both surface water and ground water, and funding for costs of that monitoring and for any needed water cleanup. BLM must have authority to require more protections if monitoring data prove that premining ground water modeling for operations is inaccurate. BLM must be able to stop operations or deny expansions of new mines if there is serious contamination or dewatering of offsite ground water resources. BLM must be required to consider cumulative impacts of mining on down-gradient ground water resources.

Response: The final rules would improve BLM's ability to require studies and long-term monitoring as your comment suggests. The supporting data and studies, including information on financial assurances, would be open to public review during the NEPA process for the proposed mining activities.

- 24.29 **Comment:** Mining laws have failed to keep pace with the realities of the volume and chemicals of current mining practices that routinely destroy streams and their watersheds. I urge you to strengthen the February 1999 proposed regulations to acknowledge the growing shortages of potable ground and surface water and loss of natural habitats.

Response: Water resource protection is a major BLM concern as well as the concern of maintaining the condition of the land and water resources for multiple use purposes. The final rules would help to give BLM greater ability in managing the impacts of mining to prevent unnecessary or undue degradation.

- 24.30 **Comment:** Drawdowns due to pumping should be considered undue degradation. For ground water 3809.420 requires only that operations minimize impacts of dewatering. Combined with the reference to effects being "reasonably incident" to mining activities, this definition suggests that the dewatering effects will be allowed to continue and that no limit would be set to the effects. If industry continues to find reserves and continues to dewater for a century, the effects could continue for centuries and be hundreds of miles away. Neither the current nor proposed regulations set upper limits to potential impacts. The current situation is that ground water is drawn down more than 1,000 feet at points near several mines and that the predicted future extent of the 10-foot drawdown isopleth

covers 1,000 square miles. Thus, we suggest the regulations include a threshold on pumping.

Response: Drawdown effects from dewatering are always greatest near the mine and decrease with increasing distance from the mine. The amount of drawdown away from the mine site can vary greatly, depending on the hydrogeologic characteristics of the aquifer bounding the mine and the boundary conditions of the flow system. These effects are temporary although the lowered water table could take decades to return to premining conditions. The effects are often restricted to a single basin, not for hundreds of miles. Typically, drawdown effects are seen a few tens of miles away from the mine. But if the potential impacts of dewatering would cause irreparable and unmitigatable harm to significant resources, BLM under the final rules could deny the proposed operation.

- 24.31 **Comment:** Cyanide and mercury are potent poisons used in mining. From this pediatrician's view they are important health hazards. Mine tailings may be dangerous not only to fish but also to humans downstream and downwind, or who share the aquifer.

Response: BLM is aware of the risks of cyanide and mercury in the environment. In its water resources and hazardous material sections, the final EIS discusses the issues and the potential for contamination. These final rules would allow management of the cyanide processes by incorporating BLM's cyanide policy guidance.

- 24.32 **Comment:** The supplemental EIS must examine the cumulative impacts of other federal rulemakings that affect mining and that have emerged since the proposed rule was published on February 9, 1999. Additional federal actions since the publication of the draft EIS in February 1999, are described below. These actions must be considered in the analysis of cumulative environmental impacts. Several pending sweeping regulatory changes to Clean Water Act (CWA) programs and proposed and final test method changes demonstrate the breadth of the changes to the CWA programs. As a followup to its April 1998 Contaminated Sediment Management Strategy, EPA has been developing an implementation framework for applying the equilibrium partitioning sediment guidelines (ESGs) in state and federal water quality and related environmental programs. The framework outlines the strategy for incorporating ESGs into state water quality standards and applying sediment criteria to, among other programs, total maximum daily load (TMDL) development and National Pollutant Discharge Elimination System (NPDES) permitting. In October 1999 and pursuant to Section 1429(e) of the Safe Drinking Water Act, EPA submitted its Ground Water Report to Congress (hereinafter referred to as the "Report"). While the Report acknowledges that more coordination for effective ground water protection is warranted, it emphasizes that EPA has responded to that need by promoting Comprehensive State Ground Water Protection Programs (CSGWPPs). BLM fails to acknowledge the reasonably foreseeable changes to the Underground Injection Control (UIC) program, an environmental regulatory program with substantial application to the mining industry. The Department of the Interior and the Departments of

Agriculture, Commerce, Defense, and Energy; the Environmental Protection Agency; the Tennessee Valley Authority; and the Army Corps of Engineers have also just developed a federal lands policy drafted to purportedly enhance implementation of the Clean Water Act and the Administration's Clean Water Action Plan. These changes not referenced in BLM's substantive description of the proposed performance standards or corresponding NEPA analysis.

Response: The cumulative impacts have been modified to include these potential regulatory burdens on the mining industry. (See mineral resource section, impacts common to all alternatives.) The mining industry will continue to experience increased regulations and restrictions from state and federal agencies. How the mining industry operates on public lands will continue to change in response to changing state and federal agency policies, which, in turn, respond to environmental degradation, political pressures, and court cases.

SOILS

- 25.01 **Comment:** Page 123 of the Soils section says that state agencies are usually staffed at a much lower level than BLM and therefore lack BLM's resources. Where did that information come from?

Response: The information came from the general working knowledge of the preparer in administering the surface management regulations in a BLM district and field office from 1981 through 1998. To support this observation of lower state staffing levels we use the following example. In Nevada, the reclamation division within the Bureau of Mining Regulation and Reclamation is responsible for reviewing and approving all reclamation plans and costs for operations involving more than 5 acres. This division is located in Carson City and staffed with about four people. BLM in Nevada has eight field offices or stations located throughout the state, each with a mineral staff ranging from two to eight people. These BLM mineral specialists typically also receive from within the same local office support from a soil scientist, geologist, hydrologist, wildlife biologist, archeologist, and range conservationist.

- 25.02 **Comment:** On page 122, paragraph 2, the Soils section of the Affected Environment discusses soil disturbance by mining since 1981. But substantial surface areas were disturbed before that time, particularly from placer mining, but also from cutting timber to support mining physical infrastructure in some parts of the Nation. This disturbance should be included in the discussion of past cumulative effects in this and other sections.

Response: The EIS is an analysis of the impacts of changing the 43 CFR 3809 regulations. Describing impacts for mining disturbances that occurred before the existing regulations took effect in 1981 is therefore beyond the scope of the EIS.

- 25.03 **Comment:** Under Alternative 2 of the Soils section, BLM says that some states have no requirement to inform the state agency of small-scale disturbances or reclamation of these disturbances. Even though operators may not have notified state agencies, they still must perform reclamation.

Response: Your comment is correct. Operators are typically required to perform reclamation for operations under 3 to 5 acres, regardless of whether they are required to notify the state or not of their activities.

- 25.04 **Comment:** The description of environmental consequences in the Soils section does not discuss cumulative effects on soil resources.

Response: A Cumulative and Residual Impacts section has been added to the Soils section of the final EIS.

VEGETATION

26.01 **Comment:** Noxious weeds are very difficult, almost impossible to control. This is especially so for the way Alternative 4 is worded. It's nearly impossible to prevent or eliminate existing infestations. Both public and private landowners have been trying to control such weeds for years with limited success, as campaigns against leafy spurge and knapweed in Montana can attest. Instead of preventing or eliminating noxious weeds, a realistic goal should be set, such as 95% control after so many years.

Response: Alternative 4 represents the Maximum Protection Alternative, and the performance standard for noxious weeds was worded to represent a higher performance standard than for Alternative 3, the Proposed Action. Your comment that complete, 100% control, prevention, or elimination of noxious weeds would be near impossible was recognized in the draft EIS when we stated on page 133 that "Eliminating existing infestations might not always be feasible and would probably require the use of herbicides." Should the language in Alternative 4 for noxious weeds be adopted in the final regulations, more guidance would need to be developed to recognize that something less than complete control or elimination of these weeds at a mine site would be an acceptable.

26.02 **Comment:** Miners shouldn't be required to control noxious weed or be monitor environmental things and do this four times a year.

Response: Some measure of weed control may be needed to check the spread of noxious weeds and to encourage establishing a desirable postmining plant community. Otherwise, unnecessary or undue degradation may result. Currently, it is our policy for BLM, not the operator, to inspect operations four times a year where cyanide is used or where acid rock drainage is occurring or may occur. Alternatives 3 and 4 would place this quarterly monitoring requirement into the regulations.

26.03 **Comment:** The discussion of vegetation and habitat distribution is meaningless without relating the extent of mining that has or is projected to occur to each of the broad groups. Alaska has the most public lands of any state and the most permafrost and coastal influenced habitats. Yet National Petroleum Reserve-A, which is all upland or lowland tundra—about 23+ million acres in total, is not open to the operation of the federal mining laws.

Response: The draft EIS described 14 broad vegetation groups and stated that disturbance from locatable minerals activities since 1981 and into future has or would occur mostly to four groups: sagebrush, desert shrub, pinyon-juniper, and southwest shrubsteppe plant communities. With respect to Alaska, most of the past and expected future mining activities on public lands in Alaska has or would consist of placer mining within existing drainages. Placer mining generally disturbs riparian vegetation with little

impact to the upland or lowland tundra you mentioned for Alaska.

- 26.04 **Comment:** BLM claims that since the implementing of the 3809 regulations in 1981, about 214,000 acres of public lands and the vegetation on them have been disturbed by mineral exploration and mining, of which 65,000 acres have been reclaimed. This is a misleading statement in that it implies that the remaining 149,000 acres will never be reclaimed.

Response: We never meant to imply that the remaining 149,000 acres would remain unreclaimed. They simply reflect areas of active mining operations where reclamation has yet to take place. Most of this area would eventually be reclaimed except for open pits not backfilled. The text of the final EIS has been clarified.

- 26.05 **Comment:** Page 130 of the vegetation section of the draft EIS states that Ross (1996) evaluated the reclamation success of mine disturbances on public lands in Nevada and found that in most cases total perennial plant cover of reclaimed areas equaled and often exceeded cover of adjacent, undisturbed reference areas. Given this, why change the performance standard?

Response: Ross (1996) shows many examples of successful revegetation where total perennial plant cover on reclaimed areas was equal to or better than nearby reference areas. The vegetation performance standards for Alternatives 3 and 4 also stress comparable diversity and use of native species, and characterize post-mining plant communities closer to what existed there before the current disturbance than implied by the existing regulations.

- 26.06 **Comment:** The first full paragraph on page 131 of the Vegetation section discusses consultation with the Fish and Wildlife Service on endangered species. Why is this included in BLM's discussion of vegetation? It does not belong there, and its presence suggests a corresponding discussion gap somewhere else in the draft EIS.

Response: Threatened and endangered species are addressed in the vegetation section for plant species. Similar discussions for animals and fish are included in the Wildlife and Aquatic Resources sections of the EIS.

- 26.07 **Comment:** On page 131 of the Vegetation section the assumption that less disturbance would result from less mining is false.

Response: The assumption of a decrease in mineral activity was based on the EIS team's taking a look at Alternative 3 and its potential affects on the mining industry and projecting a 5 % decline in activities. For the purposes of the EIS we assumed this decline would translate into a 5% decrease in surface disturbance to 11,800 acres per year under Alternative 3 as compared to 12,500 acres per year under the existing regulations. We

have since modified our projections for changes in mineral activity and surface disturbance based on comments received and incorporated these into the final EIS.

- 26.08 **Comment:** The environmental consequences of the proposed changes to the surface protection regulations and the alternatives analyzed on pages 130-133 does not address the cumulative effects of other actions on vegetation. For example, if post mining uses include recreation or livestock grazing, the effects of such actions on reclaimed lands should be discussed. We also recommend that this section discuss (1) the extent to which vegetation on reclaimed lands could support livestock grazing and (2) whether cryptogamic crusts can be replaced on reclaimed lands given the level of surface disturbance that occurred.

Response: A cumulative effects section for vegetation has been added to the final EIS.

- 26.09 **Comment:** Under Alternative 2, State Management, of the Vegetation section, to what extent could BLM require implementation of the President's executive order on the introduction of exotic organisms.

Response: Under Alternative 2 the individual states would administer the surface management program for mining of locatable minerals on public lands. BLM would coordinate with the states for compliance with the executive order and other federal laws, regulations, and policies on the public lands. But because BLM would no longer be approving or managing these locatable mineral activities, our leverage to require and enforce compliance with the executive order would be reduced.

- 26.10 **Comment:** Under Alternative 4, Maximum Protection, of the Vegetation section, plant diversity is described by the number of species of plants and life forms. This section further states that plant diversity within reclaimed areas would need to approximate plant diversity of the site before mining. The implication is that if the number of species is the same as what was on the site before mining, the species composition would not matter as long the plants are native. Is that the case? This discussion should be clarified.

Response: The revegetation performance standard for Alternative 4 is summarized in Table 2-2 and analyzed in the Vegetation section. This performance standard says that disturbed lands must be revegetated to a stable long-lasting cover that is self-sustaining and comparable in both diversity and density to the preexisting natural vegetation. In addition, the canopy cover must be at least 90% of adjacent undisturbed lands. In comparing the reclaimed area to the preexisting vegetation, species composition is an important measure of diversity, especially when comparing the different life forms. But the specifics of how species composition should be used in determining successful revegetation and diversity should be left to the NEPA process addressing individual Plans of Operations and the desired post mining land use.

26.11 **Comment:** Baseline vegetation surveys and data and animal surveys must be conducted at the correct time of year by biologists that are familiar with the vegetation and animal life of the area, especially if done by third party consultants rather than by BLM's technical field office staff. This was not done for the proposed Imperial Project. The botanical resource surveys were not done during the seasons or in response to rainfall when the greatest numbers and species diversity was present. Plant surveys missed common easily identified species because the surveys were done at the wrong time of year and the wrong time in terms of rainfall cycles. Why? Because the botanists that did the wash baseline vegetation survey for the proposed Imperial Project were from Colorado and not from the local area where they would have been aware of the vegetative and bloom cycles. For BLM to release a draft EIS with such glaring inadequacies reflects poorly on the agency and reduces public confidence in the agency and its approved work product.

Response: BLM should review and coordinate proposals for how and when baseline surveys are to be conducted for specific projects and the qualifications of the consultants before these surveys are conducted. The timing of these surveys may be important where the potential exists for the presence of threatened or endangered annual plants or seasonally migrant animal species. Ultimately, the type survey and baseline information sought depends on the issues and concerns raised during the NEPA process for the project. For the purposes of determining successful revegetation, perennial species are normally given greater consideration because annual species often do exhibit such wide fluctuations from year to year in presence and number. Reference areas also could be used to determine successful revegetation. They would be located outside the project's impact in areas of similar vegetation at the mine site.

RIPARIAN-WETLAND RESOURCES

27.01 **Comment:** The draft EIS asserts that public lands contain a total of 23 million acres of riparian areas and wetlands. This figure is wrong, since about all of 86.9 million acres of public lands in Alaska are jurisdictional wetlands and require permits from the Army Corps of Engineers. The National Petroleum Reserve-Alaska (NPR-A), which totals 23+ million acres alone, is all wetland. A figure showing the approximate locations of these riparian/wetlands on the same scale and Figure 3-1 should be included so that a reasoned independent evaluation can be made to relate the resource to existing and projected mining operations on public lands.

Response: We have made corrections to the draft EIS in response to your comment. Advances in mapping technology used in Alaska have given more accuracy in classifying and measuring riparian areas and wetlands. The most current estimates of riparian-wetland habitat are shown in Table 3-23 of the final EIS. We do not have estimates for the riparian-wetland acreage in NPR-A, but this area probably contains a large percentage of the total on BLM public land.

27.02 **Comment:** The definition and means of delineation of wetlands that apply to the Section 404 permit process is provided by the 1987 U.S. Army Corps of Engineers manual for wetland delineation (1987 Manual). This procedure depends upon three mandatory criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Nearly all riparian areas as defined by BLM support hydrophytic vegetation and experience permanent inundation or near-surface saturation. All such areas fall under Corps of Engineers jurisdiction as delineated according to the 1987 Manual. Riparian areas that are included within the list of wetlands and other waters of the United States (33 CFR Part 320) already benefit from the protections of existing Section 404 wetland regulatory process, which provides for review and comment by BLM for permits affecting its lands. The only BLM riparian areas that do not meet all three 1987 Manual criteria are areas of riparian (hydrophytic) vegetation that are supported by permanent water influence that lies more than 12 inches below the surface.

Response: Riparian-wetland areas meeting the BLM criteria need only exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water. Under BLM's definition, a great deal more land may be considered riparian-wetlands than that considered jurisdictional wetlands by the Corps of Engineers criteria. In addition, all activities affecting riparian-wetlands, not just dredge and fill activities, would be managed under the proposed final regulations.

27.03 **Comment:** In many areas where remnant woody riparian vegetation grows along smaller streams in the Great Basin, incision of the stream channel has resulted in abandonment of the flood plain on which the vegetation became established. These areas now no longer meet the wetland hydrology and hydric soils criteria and have lost their long-term

ecological viability (that is, the potential for regeneration during flood events, which no longer attain the abandoned flood plain). It would be scientifically unsound to regulate these areas by the same principles and mitigation requirements as the phreatophytic nonwetland riparian areas described above. Instead, the present riparian area within the widened, deeply incised channel bed merits regulation and mitigation for impacts. In my field experience, this latter area nearly always lies within or not more than 1 foot above the ordinary high water level and is therefore already covered by Section 404 regulations.

Response: If the proposed activity involved dredge and fill activities and the area within the incised channel but above the ordinary high water level met the three criteria to be classified as a jurisdictional wetland, the activity would be regulated by both the primary land manager (BLM) and Corps of Engineer 404 regulations. If the land above the ordinary high water mark does not meet the criteria of a jurisdictional wetland and the proposed action does not involve the discharge of dredge and fill activities, the floodplain could still be protected under BLM's proposed 3809 regulations if the potential to restore the riparian area in the abandoned floodplain is deemed feasible.

- 27.04 **Comment:** Page 133-141, Riparian-Wetland Resources: BLM does not quantify or qualify the difference between "riparian" areas and those areas subject to the Army Corps of Engineers jurisdiction. BLM's discussion just assumes that the difference is significant without supporting such an assumption.

Response: The main difference, as explained in the draft EIS, is that to be classified as a jurisdictional wetland an area must have a positive wetland indicator for all three of the following: vegetation, soils, and hydrology. For an area to be a riparian-wetland under BLM's definition, an area must only exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water. A great deal of overlap is likely between areas falling under the Corps of Engineers (COE) jurisdiction and areas meeting the BLM definition of riparian-wetland. The BLM definition will probably allow more area to be protected in the transition zone between the permanently saturated wetlands and uplands. In addition, in areas coming under both COE and BLM jurisdiction the protection provided by the proposed 3809 regulations would apply to activities beyond discharge of dredge and fill material.

- 27.05 **Comment:** [Draft EIS] last paragraph p. 134 is in error. The Army Corps of Engineers (COE) does regulate these wetlands as nonwetland waters of the United States. Many ephemeral drainages in Montana are listed in our wetland surveys as regulated by COE.

Response: COE has jurisdiction over *waters of the United States*. These waters would include intermittent streams if they are determined to affect interstate commerce. But before an area is considered a wetland that comes under its jurisdiction, COE requires that wetlands have a positive indicator present for each of the following parameters: vegetation, soils, and hydrology.

27.06 **Comment:** Page 135, Placer Mining The draft EIS assertions about the impacts of placer mining are not valid for all public lands. For example, in Alaska the Valdez Creek Mine, a placer mine, received a reclamation award from the Secretary of the Interior. Further, these assertions ignore the fact that some current day operations have reworked formerly mined areas with the final reclamation producing aesthetically pleasing and high-quality wetland/riparian habitats, for example areas along Jack Wade Creek, Alaska.

Response: Assertions in the draft EIS on the impacts of placer mining on riparian-wetlands do not always apply, but in most of the cases the assertions are accurate. The Valdez Creek Mine is a good example. This operation received a reclamation award for its unusual level of reclamation planning and implementation. Even so, the operation altered riparian-wetland communities, and many years will be needed for these communities to reach a level of proper functioning condition. Riparian-wetland areas along Jack Wade Creek remain in a nonfunctional condition throughout much of the disturbed area.

27.07 **Comment:** Riparian-Wetland Resources, Affected Environment, Effects of Mining on Riparian-Wetland Systems, pages 136-139. This section provides an excellent but concise discussion on the effects of mining on riparian-wetland systems. But it would be beneficial to give more information in this section on effects of increased streamflow from dewatering discharges to the Humboldt River, Nevada.

Response: The final EIS has been modified to reflect your comment.

27.08 **Comment:** Draft EIS, page 138, Riparian-Wetland Resources–Ground Water Drawdown: BLM's discussion of dewatering and the potential impacts of ground water drawdown on surface waters and nearby wetlands is wrong and incomplete. The panel discussion of the National Academy of Sciences' Committee on Hardrock Mining on Federal Lands (April 21, 1999) summarized regulatory requirements managing mine dewatering and the impacts of dewatering. Nevada State Engineer Michael Turnipseed described the measures that had been taken and the authority that his office had to address water quantity impacts. We take issue with BLM's discussion implying that many serious negative impacts result of dewatering. We also note that this issue is managed under existing state laws as well as the current 3809 regulations and is addressed during site-specific NEPA analysis.

Response: The impact of mine dewatering within the Humboldt River Basin is uncertain. But in 1996 mines within this basin pumped more than 32 trillion gallons of water (Shaw and others 1997). This use of water has generated a great deal of concern in the area and has resulted in the funding of a 3-year study by the National Science Foundation and the U.S. Environmental Protection Agency to investigate the potential impacts of dewatering open pit gold mines in the Humboldt River Basin of Nevada. We believe that the draft EIS accurately portrays the potential impacts of mine dewatering, but we have modified page 138 of the draft EIS to describe in more detail potential effects of mine dewatering in

Nevada.

- 27.09 **Comment:** Riparian-Wetland Resources, Environmental Consequences, pages 139-141. There is no discussion on cumulative effects from future uses of the site, particularly livestock grazing and recreation. This discussion should be added.

Response: The Cumulative Effects section of the draft EIS (page 79) acknowledges that the future condition of public lands cannot be predicted by changes in mineral activity and by the 3809 regulations alone and that collectively many other factors (including other land use activities) can have a significant impact over time. The influence of these factors (competing land use activities, environmental conditions, etc.) would be constant over the range of alternatives, and the draft EIS therefore addressed these factors in general terms. The effect of land use activities like livestock grazing and recreation in reclaimed areas after mining would likely be to prolong the time needed for riparian-wetland areas to achieve proper functioning condition.

- 27.10 **Comment:** The preamble, which forms a legal basis for initial interpretation of the regulations uses “riparian” and “wetlands” interchangeably. This sloppy use of words with 100 years of existing statutory, regulatory, and legal precedent creates ambiguity and places both the owner/operator and public at risk of arbitrary, capricious, an inconsistent application of the BLM mining regulations.

Response: As mentioned in the draft EIS, definitions used by agencies to determine regulatory jurisdiction over riparian-wetland areas are as variable as the classifications themselves. For the purposes of the proposed final regulations, if an area exhibits vegetation or physical characteristics reflective of permanent surface or subsurface water, the area will fall under the same set of regulations regardless of whether it is classified as wetlands or riparian.

- 27.11 **Comment:** BLM has an extremely biased outlook on the impact of placer mining on riparian-wetland habitat. BLM should reevaluate this position due to the ability of states to minimize impacts. For example, placer mining in Alaska has an extremely high success for quickly regrowing willow and alder as soon as mining stops. BLM has ignored the track record for current reclamation of mine workings along Jack Wade Creek, a unit of the Fortymile Wild and Scenic River and similar joint EPA/State/BLM/University results in the headwaters of Birch Creek, another Wild and Scenic River. It also ignores Secretary Babbitt’s award to the Valdez Creek Mine, a large scale placer mine or the awards by the State of Alaska for placer mining operations at Nome and in other mining districts.

Response: We believe our description of the impacts of placer mining in the EIS is a fair depiction. As you described above, there have been many successes in reclaiming placer mining. The final rules would ensure that placer mines are successfully reclaimed.

AQUATIC RESOURCES

- 28.01 **Comment:** Aquatic Resources, pages 141-153. It would be beneficial to provide more information in this section on invertebrates. Particularly in the arid West, any impact to waters may affect endemic, rare, or already declining populations of invertebrates such as spring snails or crayfish.

Response: We agree with your comment that many endemic, rare, and declining populations of invertebrates may be affected by mining that alters water resources. In fact, many of the habitat components that can be altered by mining and that are important to fish are also important to aquatic invertebrates (e.g. water quality, streamflow and water velocity, substrate, energy flow processes, and riparian vegetation). We have modified the draft EIS to reflect your concern.

- 28.02 **Comment:** Draft EIS, pages 141-53, Aquatic Resources: BLM's draft EIS analysis, e.g. cumulative impacts, should, although it does not, also account for PACFISH and other initiatives to protect aquatic habitat.

Response: The PACFISH strategy, a joint document signed by the Chief of the Forest Service and the BLM Director in February 1995, outlined and established a strategy for anadromous fish habitat management on about 15 million acres of Forest Service and BLM lands in the Columbia River Basin and 1 million acres in California. PACFISH did the following:

- Established interim goals and objectives for managing aquatic habitat and riparian areas.
- Recognized areas that most influence the quality of water and fish habitat.
- Provided special protective standards to guide management that might damage those areas.
- Outlined monitoring requirements to track how well agencies followed the standards.
- Evaluated the effectiveness of these measures.

At first PACFISH was established on a short-term interim basis (effective 18 months after the signing of the decision notice) to be followed by the preparing of geographically specific EISs to analyze longer term management strategies, such as those developed for the Upper and East Side Columbia River Basin EISs.

The impact of the PACFISH strategy on mining would vary according to alternatives developed in each of the geographically specific EIS. Depending on the standards adopted to protect aquatic and riparian resources, effects could range from no change from current management on up to the withdrawal of certain lands from entry and operation under the 1872 Mining Law. Management standards similar to those proposed in PACFISH could have been applied to geographically specific areas with or without the advent of PACFISH through land use planning procedures already in place.

28.03 **Comment:** Table 3-20 appears to overstate public lands in Alaska that are fish-bearing streams managed by BLM because the Alaska Statehood Act transferred ownership of all navigable waters to the State. As a general rule, BLM in its conveyances to Alaska Native Corporations has used a standard for state ownership that roughly equates to any stream that can float a rubber raft with four adults. Most fish-bearing streams in Alaska are at least this large. Likewise, the very large acreage (2,600,000) of “lake and reservoir surface acres” most likely represents water within the National Petroleum Reserve-Alaska (NPR-A), which has been closed to the operation of the federal mining laws since 1923. About 90% of the total public land acreage in this category is in Alaska, and therefore the existing and projected impacts from mining are grossly overstated. This again shows the lack of due diligence by the Department of the Interior and the repeated use of inaccurate data to “prove” that mining cannot be responsibly managed under the BLM regulatory system and existing federal/state/local/Native partnerships now in place.

Response: You are correct in your statement that the Alaska Statehood Act transferred ownership of all navigable waters to the State. The exceptions, however, are lands within NPR-A and in Conservation System Units and areas subject to federal navigational servitude. Since 1987, BLM has used the Gulkana River standard (which allowed for considering as potentially navigable streams suitable for small craft like freight canoes, inflatable rafts, airboats, and boats with jet units) as one of many criteria in making administrative navigability determinations. These determinations are factual, not legal determinations, that are made without regard to land status. Often, the criteria used to make navigability determinations are not totally agreed upon among the Federal Government, State of Alaska, and native corporations, or individuals. These cases end up being litigated. Only federal courts can decide questions of title ownership of submerged lands. Even if the criteria for determining navigability were totally agreed upon, most of the streams, lakes, and rivers have not had a determination made. To date, navigability decisions have been issued for most of the federal land conveyances under the Alaska Native Claim Settlement Act and the Alaska Statehood Act, but for hundreds of other waters navigability remains an issue. This said, Table 3-20 is the most up-to-date information on fish-bearing waters under BLM management. Where the state has management authority for the bed of submerged lands, this authority extends only up to the ordinary high water mark. Often the area from bank to bank does not include riparian areas, which are important in determining the condition and quality of aquatic habitat.

You are also correct in your assumption that a large portion of the 2.6 million acres of lake and reservoir surface acres from Table 3-20 is within NPR-A. The exact acreage is not available, but one can reasonably estimate that 90% of the 2.6 million acres mentioned in Table 3-20 for Alaska are within NPR-A. In 1923, NPR-A was withdrawn from the mineral laws except for lands selected by Alaska Native village corporations under Section 12 of the Alaska Native Claims Settlement Act. The withdrawal of NPR-A (and its associated streams and lakes) from the mining laws has been noted in the text of the final EIS.

Even though aquatic habitat within NPR-A is withdrawn from the mineral laws, it has the potential to be affected by other development. Cumulatively, physical and chemical degradation of waters under the management of BLM, other land managers, and private owners have contributed to the decline in fish populations and loss of habitat nationwide.

- 28.04 **Comment:** Page 142, Aquatic Resources: BLM's discussion of aquatic habitat shows the value of a "state-standards" alternative. Fisheries habitat is an Alaska issue, with 115,000 miles (about 87%) of the 132,190 fish-bearing stream miles located in Alaska. Why impose the same standard for states with only a fraction of the total aquatic habitat, for example, Arizona (0.5% of habitat), New Mexico (0.2%), and Utah with only 2.6% of the habitat?

Response: The amount of aquatic habitat within a state has little to do with the value of the habitat or the justification for protecting or rehabilitating the habitat. The current regulations allow for flexibility in the amount of effort put into rehabilitating fish habitat in response to the fishery value of the habitat. Unfortunately, under the current regulations, rehabilitation of fish habitat has been poor, largely because of the great amount of time required to reestablish watershed processes that control the flow of water, sediment, nutrients, and organic matter to a stream and ultimately define the quality of the habitat. The proposed 3809 regulations would allow BLM to deny mining that could cause substantial irreparable harm in areas having significant aquatic resources. This new standard would give a much greater level of protection to rare or highly valuable aquatic resources.

- 28.05 **Comment:** The discussion about water quality and salmonid species on page 143 of draft EIS ignores bed sediment loading typical of the many glacial streams in Alaska. The discussion also ignores the fact that Alaska Department of Fish and Game (ADFG) permits have highly stringent conditions for any activity in a salmon stream, regardless of the activity or ownership of the surrounding land.

Response: Many glacial streams in Alaska carry high sediment loads during summer when glaciers are melting and runoff is high, and many glacial streams become clear during winter. Fish are known to use glacial streams as migration routes to and from spawning and rearing areas in clear-water tributaries. But glacially controlled streams also provide spawning, rearing, and winter habitat to certain species during winter. Most of the streams managed by BLM are clear-water, nonglacial systems. The Alaska Department of Fish and Game has authority to stipulate and approve projects on waters specified as being important for the migration, spawning, or rearing of anadromous fish in accord with AS 16.05.870. About half of Alaska's waters have been surveyed for their use by anadromous fish, which leaves many waters unprotected under this state statute.

- 28.06 **Comment:** The draft EIS, on page 148, should discuss the positive side of mining on fish as illustrated by the Red Dog Mine in Alaska. In that case the premining natural

background concentration of heavy metals in the streams was so high that fish could not exist. Now fish are moving into the mining area as a direct result of two mining activities: (i) the basic mineralized bedrock is being removed through mining, (ii) surface waters are now routed around the mining areas and into the overall mining water treatment facility.

Response: The Red Dog Mine is an open pit zinc mine in northwest Alaska owned by the NANA Regional Corporation and regulated by the State of Alaska. In 1991, the mine relocated Red Dog Creek in an elevated bypass channel that allowed the creek to circumvent the Red Dog ore deposit. In addition, runoff and ground water from the mining operation are now directed to a collection pond where water is treated and released back into the environment. As a result, the water quality of Red Dog Creek is better now than it has ever been, and fish are taking advantage of the new habitat. This effort to improve water quality, increase fish habitat, and prevent water pollution shows what can be done with current technology. Unfortunately, the improvements will last only as long as the mine operates. Upon mine closure, water treatment and control practices will be stopped, and reclamation will leave the streams to their natural fate.

- 28.07 **Comment:** Page 148, Streams. The draft EIS should explain the relevance to BLM 3809 mining regulations of how many miles of stream in the national forests have acid rock drainage. The Department of the Interior (DOI) is using nongermane assertions to prove that BLM regulations are inadequate. But since the stream mileage has been discussed, it is very appropriate for DOI also to disclose whether this environmental impact on the national forests is the result of (1) mining that predates existing Forest Service regulations, (2) mining on private land not subject to Forest Service jurisdiction, or (3) mining under current Forest Service regulations.

Response: The intent of introducing acid rock drainage was not to prove the current 3809 regulations don't work but that once created, acid rock drainage is difficult to correct. Many of the streams degraded by acid rock drainage from past mining remain in a degraded or uninhabitable state today. From a cumulative perspective, aquatic habitat being degraded by acid rock drainage today will likely remain in this condition for the foreseeable future.

- 28.08 **Comment:** At a minimum, the term "BLM-defined special status species" should be defined. Beside the lack of clarity in the term "special status species," the addition of a separate provision, subparagraph (iii), especially for "BLM-Special Status Species," which is worded differently than the performance standard for fish and wildlife generally (subparagraph (i)) and threatened and endangered species (ii), suggest that different standards apply to the "BLM-defined special status species." Subparagraph (i) requires the operator to "minimize disturbances and adverse impacts on fish and wildlife..." Subparagraph (ii) requires the operator to "take necessary measures to protect threatened or endangered species and their habitat..." In contrast, subparagraph (iii) requires the operator to "take any necessary action to minimize adverse effects of operations and

access on BLM-defined special status species.” It appears that BLM is attempting to provide greater protection to BLM-defined special status species than to other forms of fish and wildlife that are not protected or listed.

Response: You are correct. BLM does require greater protection for special status species than for fish and wildlife that are not protected or listed; at a minimum, sensitive species [a component of special status species] will be given the same protection given to candidate species under the Endangered Species Act. BLM Manual 6840 defines Special status species as follows:

(1) Proposed species are those that have been officially proposed for listing as threatened or endangered by the Secretary of the Interior. A proposed rule has been published in the *Federal Register*.

(2) Threatened and Endangered (T&E) species are those officially listed as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act. A final rule for the listing has been published in the *Federal Register*.

(3) Candidate species are those designated as candidates for listing as T&E by the Fish and Wildlife Service or National Marine Fisheries Service (FWS/NMFS). A list has been published in the *Federal Register*.

(4) State listed species are those proposed for listing or listed by a state in a category implying potential endangerment or extinction. Listing is either by legislation or regulation.

(5) Sensitive species are those designated by a BLM state director, usually in cooperation with the state agency responsible for managing the species, as sensitive. They are those species that are: (1) under status review by the FWS/NMFS or (2) whose numbers are declining so rapidly that federal listing may become necessary or (3) with typically small and widely dispersed populations, or (4) those inhabiting ecological refugia or other specialized or unique habitats.

28.09 **Comment:** The draft EIS is deficient in its discussion of Section 7 consultation requirements with the Fish and Wildlife Service and/or the National Marine Fisheries Service, the two federal agencies charged with assuring that no federal action, including mining, causes damage to listed species. Accordingly, there should be no significant impacts from mining on public lands when BLM has properly completed its Section 7 consultation obligations.

Response: Section 7 consultations under the Endangered Species Act (ESA) [16 U.S.C. 1531 *et seq.*] apply only to the conservation and recovery of listed threatened and endangered species and their critical habitat. Significant impacts to fish, wildlife, and plants may occur to species other than those listed under the ESA. In addition, the consultation process does not guarantee that significant impacts will not occur to listed species. Should the consultation process result in a jeopardy or adverse modification opinion, Section 7 requires that reasonable and prudent alternative actions be taken. The intent of these actions is to avoid the likelihood of jeopardy to the species or destruction

or adverse modification of designated critical habitat. But Section 7 regulations limit reasonable and prudent alternatives to those that are economically and technically feasible.

- 28.10 **Comment:** The discussion of likely impacts from suction dredging should also include the recent scientific study by the U.S. Geological Survey of water quality in the Fortymile River, Alaska.

Response: The study to which you refer is the regional baseline geochemistry and environmental effects of gold placer mining operations on the Fortymile River, Eastern Alaska (Wanty and others 1999). One objective of this study was to evaluate the possible environmental effects of suction-dredge placer and bulldozer-operated placer gold mining. From the water quality and turbidity data, the study found suction dredges have no apparent impact on the Fortymile River system. In contrast, bulldozer mining was found to dramatically affect water quality and streambed morphology. The study did not address physical alteration of streamside and instream habitat or impacts to aquatic biota.

- 28.11 **Comment:** Aquatic Resources, Affected Environment, Effects of Mining on Aquatic Resources, Water Quality and Quantity Impacts, pages 148-153. For all alternatives, information should be included on increased concentrations and load of elements and metals resulting from dewatering discharges, with potential adverse impacts of aquatic life in terminal wetlands (e.g. Humboldt Wildlife Management Area). This discussion should also recognize the impacts of evapoconcentration.

Response: The draft EIS has been modified to reflect your comment.

- 28.12 **Comment:** Page 149, Affected Environment-Aquatic Resources. BLM's discussion of cyanide spills is not pertinent and creates a misimpression. How will the proposed regulations prevent accidental cyanide spills? In fact, BLM states that the most significant spill occurred in South Carolina. BLM cannot point to any requirement written into the regulations that would have prevented that spill.

Response: The discussion of cyanide spills was included to point out that mining-related cyanide contamination has occurred in the past and may contribute to water quality problems in the future. The regulations are not intended to prevent accidental spills but to reduce or prevent spills resulting from improper handling, placement, transport, and containment.

- 28.13 **Comment:** Page 149, Affected Environment-Aquatic Resources. The discussion of the Zortman and Landusky mines is misleading because BLM's own analysis did not find any impacts to wildlife. With respect to that operation, BLM issued an environmental assessment (EA) in response to proposed changes to Zortman's Plan of Operations. Responding to comments during the EA process, BLM stated: "There have been no impacts to domestic water supplies. There have been no impacts detected to wildlife or

fisheries. The ARD problem is not present in drainages that flow onto the Fort Belknap Reservation. And the impacts are not prevalent beyond the mine permit boundaries.”

Response: The final EIS for the Zortman and Landusky mines (Section 4.5.2, pages 4-139-142) (BLM and Montana Dept. of Environmental Quality 1996) found that “Negative impacts to wildlife have occurred from habitat loss, human and mechanical harassment and wildlife mortality. The primary impact to wildlife from mining at Zortman and Landusky Mines has been a loss of habitat.” The total disturbance at these mines was estimated to be 1,248 acres. In addition to habitat loss, the final EIS went on to state that “accidental spills of cyanide solution impacted surface waters in Alder, Ruby, Mill, and Montana Gulches at various times between 1982 and 1994. Cyanide levels in these streams exceeded the state chronic aquatic life standard as a result.” Furthermore, the final EIS states that “changes in water flows, degraded water quality, and reduced availability of water sources within mined areas have impacted aquatic macroinvertebrates and water supplies for terrestrial wildlife, both within and downstream of existing mine operations.”

- 28.14 **Comment:** Draft EIS, page 149, Affected Environment–Aquatic Resources. BLM’s discussion of pit lakes is not pertinent. BLM cites only Nevada pit lakes as an example, and yet Nevada requires protection of aquatic life in pit lakes by law.

Response: We feel the potential for pit lake water to affect water quality outside the mine is great enough to mention the topic in the draft EIS. As discussed in the draft EIS, the composition of pit lake water quality is variable, depending on the host rock for the ore, the type of ore deposit, the water type, the rates of inflow, climatic conditions, and reactions between the pit wall and the ground water. In many cases, ground water quality surrounding many pit lakes is not expected to be affected for several years or decades after pumping stops. The time required for possible impacts to the surrounding ground water quality would vary, depending on the hydrology at the mine site. Normally, ground water flows into the pit for several years after mining, sometimes requiring decades for the ground water system to reach premining or steady-state conditions. Contaminants do not flow out of the mine pit lake until the hydrologic regime reaches steady state. Once, steady-state conditions are achieved, ground water might begin to flow out of the mine pit in the direction of the regional hydraulic gradient. Because our experience with pit lakes is relatively new, especially deep pit lakes that are only recently being developed, a great deal of reliance is placed on predictions made using geochemical models, which may or may not be accurate.

As far as Nevada’s requirement for protecting aquatic life in pit lakes, this is a worthy requirement, but mines are not bonded for water quality by either the state or BLM. The operators can be required to monitor water quality for up to 30 years. But many pit lakes may not fill to steady-state conditions within this time and may not develop water quality problems until long after monitoring requirements have been met.

28.15 **Comment:** The draft EIS, page 150, presents no factual supporting data to show that placer mining during the next 20 years will adversely affect an estimated 520 miles of stream habitat when the existing 3809 regulations require reclamation and bonding for almost any mining operation that can cause the loss or significant degradation of important fish habitat. The Department of the Interior has ignored the factual information on page 58 of the December 22, 1998 analysis, which reports that a grand total of 18.8 miles (an average of less than slightly more than 1 mile annually) of stream remain affected by placer mining during the almost 2 decades that the existing 3809 regulations have been in full force and effect. Further, the draft EIS does not state the extent, if any, that the current mileage reflects a failure of the miner to comply with the requirements of the discharge permit or the Alaska Department of Fish and Game permit conditions to protect fish habitat. In at least one instance in Alaska, BLM has not only required the owner/operator to protect salmon spawning habitat, but has required that historic placer mined area also be restored to a functioning fish spawning stream. The draft EIS does not explain why this BLM-Alaska example will not be followed in Alaska or other states. Finally, the discussion does not state the extent, if any, to which the noncompliance reported in Table 3-6 involves the 18.8 miles of fish stream. This information is especially important, since a presumption of unnecessary or undue degradation (UUD) inferred in this discussion should have caused BLM to issue a noncompliance order. The Department of the Interior should carefully review the factual data for the alleged UUD, especially if there were no noncompliance findings. This again illustrates the overall bias in the way the data are presented in the draft EIS as an unsupported “justification” for the preferred alternatives.

Response: The estimate of 520 miles of lost or degraded stream habitat (26 miles per year over 20 years) was based on projections for placer mining disturbance under the current mining regulations (Alternative 1). As stated in the draft EIS, habitat needs for fish vary by species, season of the year, and life stage. A variety of chemical, physical, and biological parameters interact to provide the range of environmental conditions that allow the species to exist. Some of the more important parameters include water quality, streamflow, cover, substrate, and food availability. These parameters are directly influenced by watershed characteristics, including riparian vegetation, geology, soils, topography, upland vegetation, hydrology, and climate. Many of the watershed characteristics that are altered during placer mining can ultimately lead to a degraded aquatic habitat condition for many decades following reclamation.

Your reference to 18.8 miles of stream as the amount of stream remaining affected by placer mining after 2 decades of mining under the current 3809 regulations is incorrect. The 18.8 miles of stream was a subsample of mined and reclaimed stream evaluated to determine the effectiveness of current reclamation requirements at rehabilitating fisheries habitat. Of the 18.8 miles analyzed 95% remains in poor condition. Factors cited for contributing to the poor habitat condition were water quality, water quantity, increased sediment delivery, altered surface/subsurface hydrology, loss of riparian/wetland vegetation, altered stream geometry or gradient, and lack of instream cover.

- 28.16 **Comment:** Draft EIS, Aquatic Resources, Cumulative and Residual Impacts, page 153. Although the draft EIS discusses cumulative effects, this discussion is limited to mining activities. You need to analyze the following:
- Future uses of mining sites and lands adjacent to reclaimed lands, including livestock and recreation uses.
 - Cumulative effects of future ground water pumping or surface water diversions for agriculture, municipal, and industrial uses.
 - Agricultural drainwater contaminants, including impacts to terminal wetlands.

Response: The Cumulative Effects section of the draft EIS (page 79) acknowledges that the future condition of public lands cannot be predicted by changes in mineral activity and by the 3809 regulations alone and that many other factors (including other land uses) collectively can have a significant cumulative impact over time. Because the influence of these factors would be constant over the range of alternatives, the draft EIS addressed these factors in general terms. We understand that future and competing land uses may result in cumulative impacts to aquatic resources, and we have addressed this issue in the Cumulative and Residual Impacts section under Aquatic Resources in the final EIS.

- 28.17 **Comment:** The estimate of 26 miles per year of stream habitat lost or degraded seems excessive. Where high water occurs during winter, any evidence of mining is virtually erased.

Response: The estimate of 26 miles per year was based on projections for placer mining under the current mining regulations (Alternative 1). Placer mining can be detrimental to stream systems, and in most cases mining disturbance is readily observed for many decades.

- 28.18 **Comment:** In our area suction dredging is often used to improve stream habitat and spawning areas for salmonids.

Response: As mentioned in the draft EIS, the current state of knowledge of suction dredging and its impacts on aquatic resources suggests that the practice could be either detrimental or beneficial, depending on site-specific use by aquatic organisms and physical habitat limitations. In either case, the location and timing of suction dredging must be evaluated to determine potential impacts on fish and other aquatic resources.

WILDLIFE RESOURCES

- 29.01 **Comment:** The discussion of wildlife is so general as to be meaningless for making an independent evaluation of projected impacts from mining under the four alternatives. The statement that “all mining results in the loss of habitat” is biased because it ignores the fact that the existing 3809 regulations require reclamation and in states such as California, reclamation on public lands is almost always to wildlife habitat.

Response: The National Environmental Policy Act (NEPA) requires an examination of the environmental impacts of a proposed action and any unavoidable adverse environmental effects, including the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity. Geographically speaking, the scope of the draft EIS is enormous; therefore, we could present only a general examination of environmental impacts of the Proposed Action and alternatives. It would be difficult, if not impossible, to predict with any certainty the degree of impact that would be caused by each of the alternatives. The statement that “all mining results in the loss of habitat” was included because any type of surface mining activity disturbs wildlife habitat. But we have modified the sentence in the final EIS to reflect your concern.

- 29.02 **Comment:** The draft EIS states that wildlife mortalities declined from 2,000 animals in 1986 to just over 300 in 1993 and 1997. This significant reduction in animals killed took place under the existing 3809 regulations, a fact that the draft EIS seems to ignore when projecting wildlife mortality from mining over the next 20 years. In addition, the draft EIS does not mention the requirements in the California and Nevada statutes that mine operators take specific management actions to reduce or eliminate bird mortalities.

Response: Estimating figures for wildlife mortality over a 20-year period would not be plausible, simply because a one-time contamination incident at a mine could kill hundreds of thousands of birds, mammals, reptiles, etc. The draft EIS supports the data that shows that wildlife mortalities from mining have decreased as operators have begun to apply methods of protection.

- 29.03 **Comment:** The draft EIS does not explain the relevance of the discussion of state wildlife protection statutes to mining operations on public lands. BLM should consult with the California Department of Fish and Game or the Nevada Department of Wildlife to clarify the requirements.

Response: State wildlife protection statutes were included in the draft EIS for analysis of the State Management Alternative (Alternative 2).

- 29.04 **Comment:** I have concern about the impacts to the wildlife of the Oquirrah Mountains (which contains the Kennecott Corporation’s Bingham Canyon mine) as well as the

waterfowl that travel between the Great Salt Lake and Utah Lake along the Oquirrah's foothills.

Response: According to BLM's Utah State Office, BLM manages no lands involved with the Kennecott Corporation's Bingham Canyon Mine.

- 29.05 **Comment:** Table 3-21 provides no useful information unless the animals listed are presumed to be protected under existing 3809 regulations and then presumed to be covered in the other three Alternatives. The Department of the Interior should disclose how many of these 163 species are found primarily on public land closed to the operation of the federal mining laws. Again, the draft EIS is deficient in describing the requirements and purposes of Section 7 consultation for any federal action, including mining on public lands.

Response: The species in Table 3-21 are protected under the Endangered Species Act of 1973 (ESA). ESA's purposes are (1) to provide a means for ecosystems upon which endangered or threatened species depend to be conserved, (2) to provide a program for conserving such endangered and threatened species, and (3) to take steps to achieve the purposes of certain treaties and conventions. All BLM-administered programs, including mineral activities under the 3809 regulations, must comply with ESA. Each federal agency must ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the existence of any endangered or threatened species or destroy or harm such species' habitat that is determined to be critical. These purposes are accomplished through Section 7 consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, depending on the species involved. Section 7 directs interagency cooperation in such consultation. The purpose of Section 7 consultation is to recognize agency actions that are likely to jeopardize species, critical habitat, or both, and suggest reasonable and prudent alternatives that would not violate ESA.

- 29.06 **Comment:** In the Effects of Mining on Wildlife Section, specifically under Pollution (page 161), several citations do not deal with cyanide and should be deleted: Henny and others 1994a; Blus and others 1993 and 1995. More information should be provided on the effects of cyanide on birds, including sublethal effects. Metal cyanide complexes might also result in delayed mortality. Five other references that deal with acute and sublethal effects were provided by the commenter.

Response: We added some more information on the effects of cyanide on species in general and on birds. We gleaned some information from one of the references you supplied. We also obtained information from the U. S. Fish and Wildlife Service's Biological Report 85: *Cyanide Hazards to Fish, Wildlife, and Invertebrates: a Synoptic Review* (Eisler 1991). We did not delve into a discussion of lethal or sublethal effects. It appears that sublethal effects are not long lasting because of the rapid metabolism of cyanide and subsequent excretion.

29.07 **Comment:** A reference to mining and smelting in Kellogg-Smelterville, Idaho, is irrelevant unless the Department of the Interior can show the impacts discussed are mainly on public lands, directly result from the failure of the existing 3809 regulations, and will be avoided in the future under the proposed 3809 regulations.

Response: After consulting with the BLM office in Coeur d'Alene, Idaho, we agree with your comment and will remove the reference to the Kellogg-Smelterville mining operation from the final EIS.

29.08 **Comment:** The discussion of wildlife and threatened and endangered species "Habitat Loss or Fragmentation" is biased in presuming that 0.0 acres of habitat would be satisfactorily reclaimed during the next 20 years and that the Department of the Interior will not meet its legislative obligations under the Endangered Species Act. Likewise, the discussion of "habitat quality" is extremely biased in that it assumes that none of the alternatives will result in any mine reclamation over the next 20 years.

Response: The Wildlife Resources section was intended to give decision makers an idea of the types of effects that mining may have on wildlife. Mining inherently affects wildlife. Although some effects may be short term, others are longer lasting. The Environmental Consequences section for each alternative discusses reclamation. The Mineral Resource Development section in the draft EIS estimates that since 1981, a total of 214,000 acres of habitat has been disturbed but only 65,000 acres (30%) have been reclaimed. The remaining acreage, however, is tied up in active operations and most would eventually be reclaimed when these mines close. Under Alternative 2, state reclamation requirements are similar to existing BLM requirements, and one can assume that reclamation under State Management would approximate the current findings. Alternatives 3 and 4 have strengthened the reclamation requirements and would provide for greater re-establishment of pre-existing natural vegetation.

29.09 **Comment:** A prime example of bias in the draft EIS is BLM's using Table 2-3, which describes habitat loss or fragmentation as from 12,500 to 9,800 acres year when the existing 3809 regulations require reclamation.

Response: The spatial impacts from opening new mines or expanding existing mines far exceed the amount of land being productively reclaimed when mining operations cease. The habitat loss or fragmentation acreages cited in the draft EIS are extremely conservative. As new mines open and existing mines continue to expand, habitat losses will continue to far exceed reclamation. Only by applying and enforcing a comprehensive national policy, such as the "no net loss" principle applied to the Nation's wetlands, could the United States ensure balance between habitat loss and habitat reclamation. Under such a scenario, it might be possible to develop "mitigation banking" to protect other habitats that are at risk from non-mining activities and that are in the Nation's interest to protect.

29.10 **Comment:** The discussion of habitat fragmentation in the draft EIS, page 159, has no merit unless it can be set within the framework of other public uses such as highway modification, construction of recreation facilities, material sales, and mineral leasing, over the next 20 years. These types of data are important because (i) mining on public lands involves 0.0006% of the total public lands, (ii) the discussion implies the assumption that the Department of the Interior (DOI) will not fulfill its obligations to prevent unnecessary or undue degradation by assigning financial and professional staff resources, and (iii) the extent of this DOI failure under each of the alternatives that were presented as fully funded in the draft EIS.

Response: The purpose of the draft EIS is to analyze the effects of the proposed surface mining regulations, and only these regulations, on BLM-administered lands. Therefore, it is not within the scope of the document to compare impacts to those of other public uses.

29.11 **Comment:** Wildlife Resources, Affected Environment, Effects of Mining on Wildlife, Pollution, pages 161-162. More information is needed under this heading on the following topics:

- Increased contamination (metals and trace elements) of surface waters from ground water discharges as well as runoff from waste rock dumps. These sources of contamination could result in increased and possibly unacceptable contaminant exposure to migratory birds, especially aquatic species, including those in terminal wetlands.

- Poor quality water in pit lakes. This source of contamination could also result in increased and possibly unacceptable contaminant exposure to migratory birds, especially aquatic species. The following reference may be helpful. Hagler Bailly Consulting, Inc. 1996. Supplemental Injury Assessment Report: Clark Fork River NPL Sites NRDA; Lethal injuries to snow geese, Berkeley Pit, Butte, MT. Hagler Bailly Consulting, 34 pp. plus appendices.

Response: We added some more information on the effects of cyanide on species in general and on birds. We could not find the reference that you provided but did find some other publications pertaining to cyanide, including the U. S. Fish and Wildlife Service's Biological Report 85: *Cyanide Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review* (Eisler 1991).

29.12 **Comment:** Wildlife Resources, Affected Environment, Birds, Raptors, page 155. A statement should be added to state that because raptors are at the top of the food chain, they tend to be more vulnerable to contaminants. This vulnerability is related to higher levels of exposure due to bioaccumulation or biomagnification of some contaminants. The above statement for raptors may also be true for some carnivores, such as mink and otter.

Response: A statement on bioaccumulation or biomagnification has been added to the raptor discussion in the final EIS.

29.13 **Comment:** Rapid infiltration basins may also become attractive to wildlife and migratory birds, especially where fish have been introduced. Concentrations of metals and trace elements might rise at these sites, possibly leading to excessive exposure to migratory birds.

Response: Rapid infiltration basins are used to dispose of excess water produced at a mine site, most often from dewatering. These infiltration basins are usually dried for maintenance and exist only during the life of the mine. Both the state and BLM would normally inspect these basins and require operators to monitor their water quality and treat the water where problems occur. Any fish introduced to the basins could easily be eliminated if so desired.

29.14 **Comment:** There appears to be no clear or consistent definition for “BLM-defined special status species” as used in 3809.420(B)(6)(ii). BLM should provide an unambiguous definition of what the term is intended to mean and allow the public to review and comment on the definition.

Response: BLM state directors selected BLM-defined “sensitive species,” as directed in a BLM instruction memorandum, generally in cooperation with state agencies that manage fisheries, wildlife, and botanical resources and state natural heritage programs. Sensitive species designations for species other than federally listed, proposed, or candidate species may include the following:

- Native species that could become endangered or extinct in a state or within a significant portion of its distribution in the foreseeable future.
- Species under status review by the U.S. Fish and Wildlife Service or National Marine Fisheries Service.
- Species undergoing significant current or predicted downward trends in population or density such that federally listed, proposed, candidate, or state listed status may become necessary.
- Species with typically small and widely dispersed populations.
- Species inhabiting ecological refugia.
- Species inhabiting specialized or unique habitats.
- State-listed species that may be better conserved through by applying BLM sensitive species status.

BLM sensitive species should be managed to ensure that actions funded, authorized, or carried out by BLM do not contribute to the need to list them.

29.15 **Comment:** The draft rule must be strengthened to require completed endangered species consultation before the issuance of a final EIS and record of decision.

Response: BLM is conducting Section 7 consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Consultation will be completed before

the final EIS and rules are issued.

- 29.16 **Comment:** One thing that really bothers me about this report was on page A-175, and it says here, federally listed proposed in candidate fish and wildlife species on BLM-managed land. Now, let's see, blue whale—that's a little iffy—pinback whale; the gray whale; manatees, West Indies; the right whale; side whale; southern sea otter; sperm whale. Those would seem to be a little bit iffy of mammals being put on the endangered species list on BLM land.

Response: We will correct the list of endangered, threatened, and proposed species in Appendix F. Incidentally, a manatee has been observed on BLM-administered land in Florida in an area managed out of BLM's Eastern States Office.

- 29.17 **Comment:** The Environmental Consequences sections is lacking on impacts of pollution and transmission lines under each of the alternatives. In addition, this section has no discussion of cumulative effects of other actions on wildlife.

Response: This information has been added to the text of the Environmental Consequences sections, where applicable, for each of the alternatives. The regulations for implementing NEPA require federal agencies to analyze and disclose cumulative effects. Such analysis and disclosure are important because they alert decision makers and the public to the context within which effects are occurring, and to the environmental implications of the interaction of the proposed action with other known and likely actions. Mining on federal land is not the only factor that affects resources, including wildlife. Other key considerations include climate, recreation, livestock grazing, wildlife use, and management practices on adjacent land. The future of wildlife resources cannot be predicted by considering changes in mining alone. In light of the many factors affecting wildlife resources and the broad geographic scope and spatial resolution of this EIS, the analysis of alternatives could not and does not address all possible cumulative effects that might result.

- 29.18 **Comment:** BLM asserts that the impacts to grazing from mining during the next 20 years would be "small under all alternatives." The basis for this assumption is the fact that mining affected only 1/10 of 1% of all AUMs since 1981. This comparison of grazing with total AUMs on public lands is confusing because of all the dire consequences predicted for wildlife. Since the Department of the Interior uses the standard of AUM as the measure of grazing impact, it should also should use the same standard for wildlife because wildlife eat the same vegetation as grazing animals. It is further noted that the evaluation of grazing considers that there is not a net loss because "After reclamation, some grazing might be reestablished." The extreme bias noted in this table and Table 2-2 would be somewhat reduced if the same logic and methodology used for grazing and mine reclamation were applied to wildlife habitats.

Response: Under the Livestock Grazing section we used AUMs available for livestock grazing to evaluate potential impacts to grazing, but we did not use this system of comparison to describe potential impacts of mining to wildlife resources because the many types of wildlife species that inhabit BLM-administered land make this comparison impossible. The closest comparisons that could be made would pertain only to elk, deer, antelope, and other big game. We could not use a similar approach to analyze mining impacts to reptiles, amphibians, birds, small mammals, or carnivores. Livestock, including sheep and cattle, are prone to wander or to be herded over large areas. Many wildlife species, on the other hand, are tied to one particular habitat.

- 29.19 **Comment:** The use of the term “minimize” in the wildlife section is confusing since the unnecessary or undue degradation definition means minimize.

Response: The following definition of minimize or a close iteration will appear in the final regulations: “Minimize means to reduce the adverse impact of an operation to the lowest practical level. During review of operations, BLM may determine that it is practical to avoid or eliminate particular impacts.”

- 29.20 **Comment:** Appendix F is irrelevant unless information is provided on how these species lists correlate with lands where BLM administers the minerals.

- 29.21 **Comment:** I seem to think that in Appendix F, plants and animals and birds and whatever else like this need to be taken a real hard close look at. It looks like somebody didn’t do their job. They just went down the line, and said, okay, all these things are on the endangered species list, so, therefore, they are going to go on. This is pertaining to BLM land. This is federal land. This is land that belongs to the people of the United States.

Response: Appendix F, Plant and Animal Lists, has been updated for the final EIS using the species list that was prepared for the biological assessment. Your comment on the relevance of this appendix is understandable. Unfortunately, BLM at this time does not have any maps showing where mining is occurring or has the potential to occur. Therefore, it is difficult to pinpoint which endangered, threatened, or proposed species would potentially be affected by the surface management regulations. Given this fact, we can only include a list of species that we know occur on BLM-administered public lands.

- 29.22 **Comment:** Baseline studies for biological resources should be prepared by BLM technical staff or independent contractors that answer to BLM, paid for by operator/applicant fees paid to BLM. Indeed, what wildlife or bird life find the dust and roar of the ever deepening open pits or towering steep sloped waste rock and cyanide laced heap leach pile a hospitable environment for any purposes? When it comes to wildlife, including ESA-listed threatened and endangered species, why do BLM and USFWS always seem to ignore cumulative impacts and reflect what Leshy referred to as “BLM’s historic tenderness toward the mining industry”? Having observed the incredible dust air pollution

when mine operations were unaware they were being observed, one cannot help but question what the increasing burden of dust depositional build-up nearby desert vegetation in areas of scant rainfall means to the quality of forage for wildlife and for vegetative productivity, which also affects abundance of forage for wildlife. This may be particularly significant for smaller wildlife which is unable to relocate away from a mine site, either physically due to small size or because the surrounding habitat is already fully occupied given the forage constraints of extremely arid locations.

Response: The National Environmental Policy Act (NEPA) requires operational and baseline environmental information for BLM to analyze potential environmental impacts for any federal action. Therefore, all mineral activities proposed under Plans of Operations would have to fulfill this requirement. Notice-level operations are not considered federal actions, and therefore, operational and baseline information is not required. The regulations for implementing NEPA require federal agencies to analyze and disclose cumulative effects. The analysis and disclosure of cumulative effects are important because they alert decision makers and the public to the context within which effects are occurring, and to the environmental implications of the interaction of the proposed action with other known and likely actions. Mining on federal land is not the only factor that affects resources, including wildlife. Other key considerations include climate, recreation, livestock grazing, wildlife use, and management practices on adjacent land. The future of wildlife resources cannot be predicted by considering changes in mining alone. In light of the many factors affecting wildlife resources and the broad geographic scope and spatial resolution of this EIS, the analysis of alternatives could not and does not address all possible cumulative effects.

- 29.23 **Comment:** In the Effects of Mining on Wildlife Section, specifically under Pollution (page 161), several citations do not deal with cyanide and should be deleted: Henny and others 1994; Blus and others 1993 and 1995. More information should be provided on the effects of cyanide on birds, including sublethal effects. Metal cyanide complexes might also result in delayed mortality. Five additional references deal with acute and sublethal effects were provided by the commentor.

Response: We added more information on the effects of cyanide on species in general and on birds. We gleaned some information from one of the references you supplied. We also obtained information from the U. S. Fish and Wildlife Service's Biological Report 85: *Cyanide Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review* (Eisler 1991). We did not delve into a discussion of lethal or sublethal effects. Sublethal effects do not appear to be long-lasting because of the rapid metabolism of cyanide and subsequent excretion.

- 29.24 **Comment:** The discussion of "Habitat Quality" is likewise extremely biased in that it assumes that none of the alternatives will result in any mine reclamation over the next 20 years.

Response: We have not been able to locate the source of this comment. We have tried doing a search for the key words “habitat quality,” but it does not occur within the wildlife section. Without more information we cannot respond to this comment.

29.25 **Comment:** The use of the term “minimize” in wildlife section is confusing since the unnecessary or undue degradation definition means minimize.

Response: The following definition of minimize or a close approximation will appear in the final regulations: “Minimize means to reduce the adverse impact of an operation to the lowest practical level. During review of operations, BLM may determine that it is practical to avoid or eliminate particular impacts.”

WILD HORSES AND BURROS

30.01 **Comment:** The draft EIS, page 166, fails to explain why BLM cannot now add land use plan provisions that fulfill BLM's statutory obligations to protect 23,500 wild horses and 3,600 wild burros on 332 million acres of public land. The draft EIS does not explain the extent of BLM's authority to manage wild horses and burros or other wildlife on the 70.4 million acres of private land patented under the Stock Raising Homestead Act. The draft EIS also fails to relate existing and projected mining operations on public lands to the presence or absence of wild horses and burros.

Response: Land use plans would have to be changed to protect horses and burros if mining is determined to be affecting wild horse or burro populations. Changing a land use plan is a complex process requiring public scoping, preparing a draft EIS, a 90-day comment period, preparing a final EIS and proposed plan amendment, and another 30-day comment period. Another option for protecting wild horse and burro populations is a land withdrawal, which requires the Secretary of the Interior's approval.

Stockraising Homestead lands contain federal mineral estate administered by BLM. Many of these lands are open to location under the mining laws. Recent congressional action requires BLM to review and approve locatable mineral activities on these lands.

LIVESTOCK GRAZING

31.01 **Comment:** BLM asserts that the impacts to grazing from mining during the next 20 years would be “small under all alternatives.” The basis for this assumption is that mining affected only 1/10 or 1% of all AUMs since 1981. This comparison of grazing to total AUMs on public lands is confusing because of all the dire consequences predicated for wildlife. Since the Department of the Interior uses the animal unit month (AUM) as the measure of grazing impact, it should also use the same standard for wildlife because wildlife eat the same vegetation as grazing animals. Moreover, the evaluation of grazing considers that there is not a net loss because “After reclamation, some grazing might be reestablished.” The extreme bias noted in this table [2-3] and table 3-3 would be somewhat reduced if the same logic and methodology used for grazing and mine reclamation were applied to wildlife.

Response: Under the Livestock Grazing section you commented on the fact that we used AUMs available for livestock grazing to evaluate potential impacts to grazing but did not use this system of comparison to describe potential impacts of mining on wildlife resources. This may seem to be a logical conclusion, but the many wildlife species that inhabit BLM-managed land make this comparison impossible. The closest comparisons we could make would pertain only to elk, deer, antelope, and other big game. Unfortunately, we could not use a similar approach to analyze mining impacts to reptiles, amphibians, birds, small mammals, carnivores, etc. Livestock, including sheep and cattle, are prone to wander or to be herded over large areas whereas many wildlife species are tied to a particular habitat.

SPECIAL STATUS AREAS

32.01 **Comment:** On page 175 of Chapter 3, you talk about VRM and ‘special areas.’ As I understand it, a wilderness study area is protected while a congressional decision is made on making it a wilderness area. How long can an area remain in ‘study’ status? Forever? Until BLM can come up with another designation to keep it locked up? If it is not given wilderness status by Congress, isn’t it supposed to return to former status? It seems that by coming up with new designations, a creative BLM could limit any more exploration or mining activity, without the stress generated by denying Notices or Plans of Operation.

Response: Locatable mineral activity in wilderness study areas (WSAs) is subject to regulation under the 43 CFR 3802 regulations, not the 3809 regulations. Please see the 3802 subpart for more information on the requirements for operating within WSAs. Areas under wilderness consideration remain that way until either Congress decides upon a designation or releases them from further consideration.

32.02 **Comment:** The proposed rule exempts from the 5-acre notice provision certain special status areas, including “areas specifically identified in BLM land-use or activity plans where BLM has determined that a plan of operations is required to provide detailed review of project effects” on a variety of resources. If, as we strongly recommend, BLM regains the 5-acre Notice provision in modified form, we urge it to place some reasonable limits on its power to remove lands from the scope of the 5-acre Notice regime so the exception does not swallow the rule. We reiterate the suggestion in our prior comments that BLM clarify that designations of special status lands will comply with FLPMA 202(a) & (f), which requires BLM to provide for public involvement before issuing a land use plan. Newmont Gold suggested in its comments on the February 1998 Predecisional Draft (page 11) that BLM designate special status areas only after the governor of the state containing the affected land concurred that the land in question was truly unique, irreplaceable, and outstanding. We still favor that approach. But if BLM is nevertheless inclined to retain the current language, we strongly urge it to clarify that it intends to be bound by FLPMA 202. To do so, we urge it to replace the critical language of proposed 3809.11(j)(6) (Alternative 1) with the following: “Any areas specifically identified in BLM land-use plans complying with FLPMA 202(a) and(f) where BLM has determined that a plan of operations is required to provide detailed review of project effects on unique, irreplaceable, or outstanding historical, cultural, recreational, or natural resource values, such as threatened or endangered species or their critical habitat.”

Response: The section describing lands that always require a Plan of Operations at proposed, 3809.11(j)(6), has been changed to 3809.11(b)(6) and narrowed from “...outstanding historical, cultural, recreational, or natural resource values, such as threatened or endangered species or their critical habitat” to “Any lands or waters known to contain proposed or listed threatened or endangered species or their critical habitat.” With the change in the Notice-Plan threshold in the proposed final regulations (all mining

requires a Plan), it was determined that this was the only area that justified requiring a Plan for any activity greater than casual use.

- 32.03 **Comment:** No mining should be permitted in special lands such as ACECs, wild and scenic rivers, national monuments, wilderness, wildlife areas, national landmarks, and national conservation areas. Don't break things you can't fix. If the land has spiritual significance or irreplaceable scenic value and mining would destroy these values, don't mine there. Miners proposing to mine in these areas should be held to a higher standard than those on less sensitive lands. Special status exclusion of sensitive areas made entirely off limits to any mining activities. Resource values other than mining should be given consideration in any area.

Response: The provisions of these special areas will determine whether they are open to mineral exploration and mining. The new definition of unnecessary or undue degradation gives increased protection from substantial irreparable harm to significant resources in areas such as these. This definition would allow BLM to disapprove Plans of Operations that would result in substantial irreparable harm to these significant resources.

- 32.04 **Comment:** This special status area provision is unnecessary in that FLPMA provides special protection for areas of critical environmental concern (ACECs), which are defined as areas where "special management attention is required...to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards."

Response: The initial intent was to increase protection without requiring an ACEC designation. This proposal has been dropped and replaced with a requirement targeted at threatened and endangered species and their critical habitat.

- 32.05 **Comment:** 3809.11(j) defines special status areas very broadly where Plans of Operations are mandated for all uses greater than casual use. Specifically 3809.11(j)(6) is troublesome because it would likely place the majority of public lands off limits to Notice-level operations. Any of the endlessly useful designations could be applied to any land on which a proposed claim is located in order to deny it. This provision erodes the Mining Laws and FLPMA, which specify that public lands are open to exploration and development unless withdrawn in accordance with FLPMA's withdrawal procedures. Proposed 3809.11(j)(6) should be deleted from the list of special status areas.

Response: Proposed 3809.11(j)(6) did not close or change the applicability of the Mining Law in any of these areas. The requirement was for more detailed review of surface-disturbing activities. The performance standards that apply to operations would be the same regardless of the special land designation. This proposal has been dropped and replaced with a requirement targeted at threatened and endangered species and their

critical habitat.

- 32.06 **Comment:** Section 3809.11(i), Stockraising Homestead, should be deleted. The language expands the scope of these rules beyond locatable minerals on federal lands.

Response: Stockraising Homestead lands contain federal mineral estate administered by BLM. Many of these lands are open to location under the mining laws. Recent congressional action requires BLM to review and approve locatable mineral activities on these lands.

- 32.07 **Comment:** BLM must have discretionary authority to determine that mining is inappropriate and should be denied on some public lands to prevent undue degradation of public lands and their resources. Accordingly, we believe that BLM must have and must acknowledge that it does have the explicitly stated and unambiguous regulatory authorization to determine that mining is not appropriate on all public lands, even if it can be proven that valuable mineral deposits exist and even if the best available technology and practices were proposed. Some public lands are more valuable for retention and protection for future generations because other resources outweigh the value of the land for mining. Considering other resources is another way of stating that BLM 3809 regulations should include provisions for what has been referred to as the “comparative value test.” Consistent with the provisions of FLPMA and the California Desert Conservation Area Plan, BLM regulations should include provisions to consider the public demands for considering the value of public lands for either mineral development or agriculture. Wilderness areas, wilderness study areas, areas of critical environmental concern, national monuments, and management areas that are subject to conservation agreements, and designated critical habitat for federally listed threatened or endangered species under the Endangered Species Act (ESA) all have special management requirements that impose added management consideration or restrictions for mining on BLM- managed public lands.

Response: The Mining Law gives claimants the right to enter, explore, and mine on public lands subject to the requirement that they not cause unnecessary or undue degradation. The existing definition of unnecessary or undue degradation does not include a comparative values test. The right to mine is not diminished by the other resources present as long as these resources are properly considered and the disturbance is reclaimed. The final regulations include a new definition of unnecessary or undue degradation that gives BLM more discretion in the types of impacts operators may cause and includes a prohibition on causing substantial irreparable harm to significant resource if this harm cannot be effectively mitigated. Although this provision does not give BLM total discretion over mining as a comparative values test would, it does provide a tool whereby BLM can prevent most irreparable impacts to the most significant resources. BLM does not expect to apply this provision often.

RECREATION

33.01 **Comment:** On page 171, the EIS references 262 million acres of public lands. This does not agree with the acreage shown in Table 3-1. The general discussion about recreation would be better if it can be related to mining under the existing 3809 regulations and projected for the next 20 years under the three other alternatives. Specifically, the DEIS is deficient because it does not show recreation acreage by state has been adversely impacted by the mining activity shown in Tables 3-2 and 3-3 or how these impacts were projected over the next 20 years.

Response: The figure in Table 3-1—261,614,888—has been rounded to 262,000,000 in the recreation section. We do not have figures by state for the amount of recreation acreage that has been disturbed by mining. We cannot quantify impacts to recreation acreage under the different alternatives, but we discussed impacts qualitatively for each alternative.

33.02 **Comment:** We are worried that your term “recreational mining” has never been defined and is subject to arbitrary use of someone for restricting public access to public lands any time they feel like it. All rock specimens come from the ground, some are easily picked up from the surface, some have to have dirt moved a little, some a lot. Who is to decide how much dirt removal is “mining”? . . . We are worried that someone will prevent us from collecting a piece of granite that shows three different cooling rates, or a piece of onyx that shows earthquake fractures and taking them to a school to show students that are interested in science.

Response: The term recreational mining does not appear in the Proposed Action. The important definition is that of casual use, which was clarified in the Proposed Action. Casual use means activities ordinarily resulting in no or negligible disturbance of the public lands or resources. In the Proposed Action examples have been added to the definition of casual use. These examples include hand panning; nonmotorized sluicing; and collecting geochemical, rock, soil, or mineral specimens using hand tools.

33.03 **Comment:** Don’t take away the ability of the small prospector to use small motorized equipment (such as a highbanker, suction dredge (vac pac), drywasher, mini-backhoe) that increases the chances for better gold recovery. We follow all the rules and regulations now in place; the system seems to work fine. I think your proposed requirements on the small and recreational miners are overkill.

Response: Under the Proposed Action the use of some of the above equipment is considered casual use; use of other equipment is not. Using hand and battery-operated drywashers is considered casual use. Using a mini-backhoe is not considered casual use because mechanized earth-moving equipment is involved. Use of highbankers is also not considered casual use. A suction dredge may be considered casual use if the effects of the

activities are negligible.

- 33.04 **Comment:** We enjoy metal detecting on our public lands and hope to continue this activity in the future. Requiring an EIS for a day or weekend outing is ridiculous. These regulations would stop this activity on public lands.

Response: The use of a metal detector is considered casual use and does not require the operator to notify BLM.

- 33.05 **Comment:** An effect of multiple, overlapping jurisdictions is that special interest groups do use the resulting lack of coordination between agencies to their advantage, and to the disadvantage of the suction dredging community. We, the suction dredging community, are forced to expend more of our money, time and effort when attempting to understand and respond to the requirements of each agency, separately.

Response: BLM is attempting to simplify the rules for suction dredging by setting up a system by which BLM would defer to state regulations in states that require an authorization for suction dredging and have an agreement with BLM. In these cases, the operator would only have to get a state permit rather than file a Notice or Plan of Operations with BLM. If an agreement is not in place, the operator must contact BLM to determine if dredging constitutes casual use. If BLM determines that dredging does not constitute casual use, a Notice or a Plan must be submitted. Currently, no BLM-state agreements on suction dredging are in place.

- 33.06 **Comment:** Page 173 of the draft EIS, on recreational mining, refers to more than 500 people being involved in club outings in southern California. This is inaccurate. Only one club in that area, or in California, has a large enough membership to support 500 people on a common date. And these operations are held on private and patented property. There is some confusion in this area, and I'd be glad to help to clarify.

Response: The text of the final EIS has been revised in response to your comment.

- 33.07 **Comment:** This proposal would have a dramatic impact on the outing that our club has, because it says that you could not have more than 10 people working in a five-acre area. Another thing that would have a substantial impact on our club would be the criminal and civil penalties that could be imposed. If we were to unintentionally violate these regulations, if we were to have 12 people mining in a one-acre claim that our club has access to, from what I can understand here, we could be subjected to very severe civil and criminal penalties, which if that's the case, then that would pretty much eliminate the outings for our club.

Response: There are no limits on the number of people who can work a particular area. The limits apply to the amount of disturbance allowed before a Notice or Plan must be

filed. Under the Proposed Action, if more than negligible disturbance is expected, a Notice or Plan must be filed and bond posted.

- 33.08 **Comment:** The importance of distinctions between Casual Use and Notice levels should be carefully considered. If recreational mining claims are included in the Notice level, the accompanying bond requirements would put recreational miners and clubs out of business financially and virtually eliminate recreational mining by out-of-area tourists. The economic impact on areas like ours where there is a lot of recreational mining going on and the businesses that cater to these miners could be severe.

Response: Under the Proposed Action recreational mining that meets the casual use criteria (such as gold panning, metal detecting, rock collecting, use of hand and battery drywashers) would continue as before. Activities that do not meet these criteria (such as some suction dredging or some group activities) would require Notices or Plans and bonding for either. BLM estimates that casual use may decline by 10% to 20%. This decline would mainly affect section dredging. In some cases BLM field offices have developed public lands for recreational mining. The Proposed Action would not affect such activities.

- 33.09 **Comment:** Unless BLM is going to require bonding or financial guarantees for other users such as campers and hikers who could drop a cigarette or start a fire with major damage to the public lands, BLM is singling out and discriminating against one group—miners. You need to honestly inventory and assess the impacts of all groups when performing the recreation evaluation. Public land must not be open to some and locked out to others.

Response: Activities that fall within the casual use definition (activities ordinarily resulting in no or negligible disturbance of the public lands or resources) require no financial guarantees. It is outside the scope of these regulations to evaluate and compare different types of recreation.

- 33.10 **Comment:** We disagree with the assumptions under Recreation (page 171) that more people are looking for primitive recreation. The population is aging with fewer young people who are able to access these areas.

Response: The statement you refer to has been deleted.

- 33.11 **Comment:** If you look at the tourism, they are kicking up all kinds of dust because what they want to do is go see an active placer operation. I live in the old town of Fox, it's a highlight of the tourism industry here in the Fairbanks area, and they want to come up and see mining activities.

Response: The Recreation section has been revised to reflect a demand for this type of

activity.

- 33.12 **Comment:** The changes that are taking place in the West right now make it very certain that our future will be linked closely to the extent to which we retain as near a pristine natural environment as possible. People are not interested in seeing the destruction created by a mine. As the population of the US and the world continues to increase, recreational space will become more and more valuable and even vital in maintaining our sanity as well as our economy.

Response: Your comments are noted. The Social Conditions section of the EIS has attempted to portray the attitudes and values held toward mining and land preservation.

- 33.13 **Comment:** Fish will likely be stocked in some or all pit lakes, thereby attracting fishermen. In some pit lakes with poor water quality, the fish might accumulate elevated concentrations of various metals or trace elements, possibly making them unfit for human consumption. The recreation section needs to discuss the possible attractiveness of pit lakes for fishing as well as the issue of potential contamination of the fish therein.

Response: Water quality would be one of the major criteria for determining if a body of water would be stocked with fish. The presence of dangerous metals would eliminate the possibility that pit lakes would be stocked. This type of analysis would be conducted on a case-by-case basis.

- 33.14 **Comment:** We disagree with the assumption that recreational opportunities would change with primitive recreation decreasing under Alternative #1. There is not much mining going on in Wilderness areas due to increasing restrictions. The closing or decommissioning of hundreds of miles of roads in the last few years has provided many new primitive recreational areas and this trend is continuing. The small amount of land affected by mining is not going to have much, if any, impact on the amount of primitive recreational opportunities.

Response: This discussion has been changed to state that the recreation mix might change in local areas.

- 33.15 **Comment:** BLM should continue to allow casual prospecting with hand equipment, collecting, and small scale mining. My family and I have great respect for the land and do not abuse our right to explore, pan for gold or collect specimens. We clean up the trash that others leave and act responsibly toward the environment. A lot of people just like to enjoy the outdoors without spending lots of money. This is an activity that is passed down from generation to generation within a family and teaches about the history of our country as well. Casual use mining is a wonderful activity that allows us to enjoy this wonderful land and spend quality time together.

Response: Your comments are noted. Under the Proposed Action, recreational mining that meets the casual use criteria (such as gold panning, metal detecting, rock collecting, and use of hand- and battery-operated drywashers) would continue as before.

- 33.16 **Comment:** We strongly oppose closing any more BLM land or roads. It dismays us to see more and more of our land closed to us. If you want to do something constructive, increase our access to public lands.

Response: Addressing road closures or access to public lands is outside the scope of these regulations.

- 33.17 **Comment:** To think that Recreational mining would only decline by 5% under Alternatives #3 and #4 is not logical. "Requiring all participants to consult BLM and some file plans might delay or preclude some recreational mining" is an understatement. Let's remember the process: Filing a plan requires 30 business days to review the correctly completed plan, then the publication and public comment period on the bond calculation (don't forget to bond for unplanned events), next obtaining the bond, then completing the Economic Feasibility report, completing the Environmental Assessment or Impact Statement, and submission of soil, air and water samples. That just might deter some folks.

Response: Under the Proposed Action, recreational mining that meets the casual use criteria (such as gold panning, metal detecting, rock collecting, and use of hand- and battery-operated drywashers) would continue as before. If activities fit into the casual use definition, the operator is not required to contact BLM or file a Notice or Plan. The estimated decline in casual use under Alternative 3 has been revised to reflect a decline of 10% to 25%. The estimate of the decline in casual use under Alternative 4 has been revised to reflect a decline of 30% to 50%. The discussion of this activity for Alternatives 3 and 4 has been revised in the final EIS.

- 33.18 **Comment:** The casual or weekend miner could become extinct. BLM could require that recreational mining activities require either a Notice or Plan of Operations, which would require higher fees and bonds. The paperwork involved just to take family and friends on an occasional outing for some recreational prospecting would be enough to effectively discourage many of use from enjoying our public lands. Also having to contact BLM before any mining activity would seriously overburden the BLM staff with decisions about activities that go on everyday without harm. The existing definitions of casual use have proven quite satisfactory.

Response: Under the Proposed Action, recreational mining that meets the casual use criteria (such as gold panning, metal detecting, rock collecting, and use of hand- and battery-operated drywashers) would continue as before. If activities fit into the casual use definition, the operation is not required to contact BLM or to file a Notice or Plan. Activities that do not meet the casual use criteria (such as some suction dredging or some

group activities) would require Notices or Plans with bonding required for either. BLM estimates that casual use might decline by 10% to 25%. This decline would mainly affect suction dredging.

- 33.19 **Comment:** I would like to see BLM identify the most popular rockhounding sites across the West and designate them as public rockhound sites, with access to all.

Response: Designating rockhounding sites is outside the scope of the proposed final regulations.

- 33.20 **Comment:** All lands should remain open to casual and recreational mining and rockhounding with no restrictions.

Response: All lands are open to activities that qualify as casual use unless some other restrictions apply. These restrictions could be related to local land use plans, threatened and endangered species, and a variety of other resources and resource conditions.

- 33.21 **Comment:** These proposed regulations will impose an undue hardship on recreational mining clubs. Section 3809.11 singles out recreational groups making it necessary to file a plan of operation in order to conduct weekend outings. This seems to be a means for BLM to stop an event without actually banning it. These events happen infrequently during the summer. BLM could delay approval of a plan for these groups long enough as to ruin their summer season.

Response: The part of Section 3809.11 that discussed “recreational mining activities by a group, such as a mining club” has been deleted from the proposed regulations. But clubs and groups would still be required to file Notices or Plans if their activities could more than negligibly disturb public lands or resources. BLM must respond to Notices within 15 calendar days and to Plans within 30 calendar days. Under the Proposed Action, state directors may establish areas as they deem necessary where any person or group intending to conduct activities under the mining laws must contact BLM 15 calendar days before beginning activities to determine whether a Notice or Plan of Operations must be submitted.

- 33.22 **Comment:** Please clarify in detail those situations where a notice or plans of operations is required by a recreational mining group.

Response: Under the Proposed Action, a Notice or Plan of Operations is required of a recreational mining group for any activity that could exceed casual use. Exceeding casual use means that their activities would more than negligibly disturb the public lands or resources. In addition, BLM state directors may establish specific areas as they deem necessary where any person or group intending to conduct activities under the mining laws must contact BLM 15 calendar days before beginning activities to determine whether a Notice or Plan of Operations must be submitted.

VISUAL RESOURCES

34.01 **Comment:** This is to record my strong support to limit surface mining where it destroys scenic lands. It is so important to preserve scenic lands for the future of our children. You at BLM are the custodians of unique country and scenery. Please be aware of your responsibility.

Response: All Notice- and Plan-level operations would be reclaimed. Reclamation and other mitigation measures developed through NEPA documents would enhance the protection of visual resources. See the final EIS, Chapter 3, Visual Resources, Environmental Consequences.

CAVE RESOURCES

35.01 **Comment:** 3809.420(b)(7) Define what you mean by a cave.

Response: The definition of a cave is found both in the text and in the glossary of the draft EIS, pages 178 and G-4, respectively. The definition defines a cave as a “naturally” occurring form.

35.02 **Comment:** 3809.420(b)(7) Will BLM require cave definition if an operator is remining at an inactive mine site? This is especially troublesome when you consider the mine drifts were not mapped. How do you propose to do this?

Response: An abandoned drift, adit, or shaft is not naturally occurring and is therefore not a cave resource. But an abandoned drift, adit, or shaft might be considered a historic site. If determined to be a historic site, an abandoned mine or remnant would be recorded in enough detail to complete the determination of its eligibility for listing on the National Register of Historic Places.

35.03 **Comment:** 3809.420(b)(7) In most mining operations, voids are created as the result of blasting. Would such voids be considered caves?

Response: Voids created by blasting would not be considered naturally occurring.

PALEONTOLOGICAL RESOURCES

- 36.01 **Comment:** Having miners pay for investigation, recovery, and preservation of resources or antiquities discovered during mining would be OK if they could keep what is discovered. Otherwise the proposal is ludicrous and downright punitive to a small miner.

Response: Antiquities discovered on federally managed land remain property of the Federal Government and are protected by a variety of federal laws that protect and preserve such material for the benefit of the American people.

- 36.02 **Comment:** 3809.420(b)(7) Paleontological resources include virtually all sedimentary rocks. Whose responsibility will it be to define what is the resource?

Response: Detecting fossiliferous formations or actual fossils is the responsibility of BLM, which will identify formations that potentially have fossils of concern. The most significant fossil types are vertebrates and soft-bodied invertebrates. Most fossiliferous formations are already known to paleontologists.

- 36.03 **Comment:** 3809.420(b)(7) How will a mine operator deal with the paleontological resource if the operator is mining a skarn deposit and removal for paleontological resources are required.

Response: Vertebrate fossils that are protected by legislation are not common in skarn deposits. But during operations, if a vertebrate fossil is found, the operator would be required to contact BLM to determine the fossil's significance.

- 36.04 **Comment:** 3809.420(b)(7) I get the idea that BLM will be required to have a field office at the mine site to monitor this and a continual stream of notices will be needed by the operator and BLM. Please explain how and why this would not be the case.

Response: Generally, if it is determined during the Notice or Plan review that mining will involve a fossiliferous formation, the paleontologist will determine if a sample is required and if the fossiliferous material is a common variety or worthy of more extensive study. Continuous monitoring has not been required in any instance to date. But during operations, if a vertebrae fossil is found, the operator would be required to contact BLM to determine the fossil's significance.

- 36.05 **Comment:** 3809.420(b)(7)(i) Under what statute does BLM have decision making authority for fossils? Define "scientifically important."

Response: BLM manages paleontological resources under the Federal Land Policy and Management Act, and paleontological resources are managed as "scientific values." These values also include areas of geologic interest, areas of critical environmental concern,

unusual or unique natural areas, or areas with sufficiently unusual resources that are or may be of interest to the scientific community.

- 36.06 **Comment:** The draft EIS's (page 180) discussion of dinosaur fossils in Alaska is presumed to be fossils found in National Petroleum Reserve-A (NPR-A), which is closed to mining. If true, this statement again represents a bias that mining on public lands is a significant, uncontrolled threat to fossils.

Response: Fossiliferous material may be as young as a late Pleistocene vertebrate material and be found in the alluvial material currently mined by placer techniques. These kinds of deposits are common in Alaska, both inside and out of the National Petroleum Reserves.

CULTURAL RESOURCES

- 37.01 **Comment:** Table 3-22 provides no relevant information about the existing 3809 regulations, the proposed regulations, and the other two alternatives without linkage to data about mining operations presented in Tables 3-2, 3-3, and especially 3-6. Without these mining data, the table simply means that more than 81% of all public lands are devoid of designated nationally significant cultural resources.

Response: Table 3-22 in the draft EIS shows the number of known sites on all inventoried public lands (5.7%) as stated in the text. This leaves 94.3% of public lands lacking inventories, as of 1994. These inventories have been completed as a result of all actions on public lands that require inventory, not solely mining.

- 37.02 **Comment:** The draft EIS, page 184, references the fact that in Alaska 93% of an unidentified number of Plans of Operations since 1981 have involved historic resources. But the draft EIS did not reveal that in fact that most of these historic resources were remains for more than 100 years of mining and ranged from hand tools to long abandoned structures on mining claims that continue to be mined.

Response: These sites also include trails, prehistoric remains, and abandoned towns, some with standing structures.

- 37.03 **Comment:** Page 182 “Prehistoric Resources” A lot of current evidence (carbon data, fossil records, etc.) shows that human beings have inhabited the Western Hemisphere for much longer than 15,000 years. In fact, many tribal stories stem from geologic and historic events that date back farther than even 30,000 years.

Response: Evidence for a pre-15,000 year occupation is accumulating as archeological research proceeds. But at this time the most scientifically acceptable date is still around 15,000 years before the present.

- 37.04 **Comment:** The proposed regulations use terms such as cultural resources, historical resources, national heritage sites, sensitive sites, and protection. I am all for responsible land management, but these proposed regulations do not resemble responsible land management, nor were they designed with responsible land management in mind. These proposed regulations were designed to create preserves and eliminate the small-scale miner and prospector. One only has to read BLM's proposal to come to this conclusion.

Response: In general, the “sites” protected by the National Historic Preservation Act are specific, well-defined occurrences of prehistoric, historic, or ethnologically sensitive areas that contain evidence of human use or occupation that may have local, regional, or national significance. More rarely, a historic site is the site of an event important at the local, regional, or national level. These may be battlefields, trails, traditional use areas, or

religiously significant areas. The proposed changes to the regulations simply invoke and reaffirm the application of these laws in administering mining actions. These changes do not alter or amend the content of these laws.

- 37.05 **Comment:** Under Alternative 4 no cultural or paleontological resources would ever be discovered by miners again because this alternative could shut down operations for an unlimited amount of time, and the operator would bear the cost of recovery. If that's the case, you'd better let the miner sell these resources to recoup his losses. This would be unfortunate because miners make so many important finds.

Response: Cultural resources on public land remain the property of the Federal Government as part of the national heritage. The land managing agency is responsible for assuring that the discovery, disposition, and curation of these materials will ultimately benefit the people of the United States.

- 37.06 **Comment:** The existing proposal has problems. For example, there does not appear to be a requirement for a complete cultural resource survey.

Response: The requirements for inventory and evaluation of National Register properties is contained in 36 CFR 800. The proposed 3809 regulations invoke adherence to these regulations as the land management agency evaluates and approves Plans of Operations as a part of a federal action.

- 37.07 **Comment:** More and more environmental mitigations go beyond just safety and basic pollution avoidance and into the realm of taste. Industry history is being erased by requiring the removal of all structures (many of which would be recycled anyway) and any evidence of activities. Generally what is required is a return to a "natural" condition lacking any evidence of what human activity occurred on the site. Each year more and more of this history is being removed from the land to satisfy the taste of the environmental elites who seem to prefer scenery to the intrigue of mining operations. That such interest exists is testified by the interest the public shows in Virginia City, Bodie, and many other nonimproved mining areas. No mention is made of this aspect of regulation. Such an analysis should be provided.

Response: Historic properties are defined in 36 CFR 800 as being at least 50 years old or having local, regional, or national significance. Any citizen or group may nominate properties to the National Register of Historic Places, yet the inclusion of a site on the National Register must be approved by the land owner or manager. For active mining operations, if there is a public interest in leaving traces of the mining operations, this interest certainly could be analyzed during the NEPA process for that operation.

- 37.08 **Comment:** In accordance with the recommendations of the National Academy of Sciences report, BLM should not revise the existing regulatory provisions relating to

protection of cultural resources but should focus its attention on improving implementation of the existing regulatory procedures.

Response: The National Park Service revised 36 CFR 800 and published the final rules in July 1999. The proposed changes to the 3809 regulations would simply apply to the final rules for protecting cultural resources. These changes would not alter the cultural resource rules.

- 37.09 **Comment:** BLM has not shown that doubling the time a mining operation must be shut down for cultural resource recovery will afford greater protection than the existing time frame when the draft EIS has been prepared on the assumption of full funding. Further, BLM has not evaluated the need for BLM to inspect and approve the recovery of a newly discovered item during the approved mining operation when the owner/operator must have previously established a prior professional working relationship with a private consultant that now has first hand knowledge of the project area.

Response: The increase in the time would simply allow more time where needed for recovery operations, including the time needed to permit a data recovery plan. The discovery of cultural resources during mining usually would affect only a portion of the mine site. The operator should still be able to continue operations rather than suffer a complete shut down during this period.

- 37.10 **Comment:** Importantly, analysis of cumulative effects would neither be difficult nor speculative. For example, in the draft EIS analysis of cultural resources, BLM claims that under the No Action Alternative, impacts to cultural resources would be expected “to stay at the same level,” while under the preferred alternative—for reasons related mainly to BLM’s assumption that mineral activity would decrease—“a more detailed cultural resource review would result” (draft EIS, pages 184-185). Neither of these statements is true because BLM has ignored the expected changes to the federal regulations implementing Section 106 of the National Historic Preservation Act. When cumulative impacts are properly considered, there may be no difference in impacts to cultural resources among the four alternatives.

Response: The draft EIS was prepared and published (February 1999) before the release of the final rules for National Historic Preservation Act (NHPA). Anticipating changes in the rules at the time of preparation would have been presumptuous and might have led to error. We have included a discussion on cumulative effects in the final EIS. This discussion covers the final rules that were published in July 1999. Regardless of the final rules for NHPA, we still project differences in the final EIS for impacts on cultural resources from the proposed changes to the 3809 regulations, especially, where they limit when a Notice can be used. Provisions requiring Plans of Operations for what are now Notice-level actions would significantly benefit cultural resources. That Notice-level activities are not federal actions and have short review periods often makes it difficult to

protect or recover cultural resources.

- 37.11 **Comment:** Regulatory Reform and Revised Approach to Implementation. On May 18, 1999, the Advisory Council on Historic Preservation finalized a 6-year process of drafting changes intended to implement the 1992 amendments to the National Historic Preservation Act (NHPA). The failure to reference those rules and the pertinent changes to land management is a significant flaw in BLM's cumulative impacts analysis and was stated in prior comments. But on a related note, the Department of the Interior's later interpretation of NHPA-related issues lends further credence for the need for more draft EIS analysis. Specifically, on December 27, 1999, Solicitor John Leshy distributed an opinion intended to outline BLM's legal authorities in the context of proposed Glamis Imperial Gold Mine in Imperial County, California. Even though many of the proposed project's controversies stem from the mine's location in the California Desert Conservation Area and its being subject to the requirements of the California Desert Plan, the opinion interprets BLM's legal authority with respect to a number of issues, including the following:

- Aspects of the Mining Law of 1872.
- The First Amendment.
- The executive order addressing Native American access and use of public lands for religious purposes.
- The Federal Land Policy and Management Act's unnecessary or undue degradation standard.
- The California Desert Conservation Area's undue impairment standard.

Incredibly, the Solicitor's interpretations of the above have not been addressed by any aspect of the environmental analysis related to the proposed rules. BLM must consider the effects of the sweeping, multifaceted opinion in its NEPA analysis of the proposed rules.

Response: The draft EIS was published in February 1999, before the events mentioned in your comment. The effects of new cultural resource regulations and the Glamis opinion have been added to the final EIS.

- 37.12 **Comment:** 3809.420(b)(7)(i) I get the idea that if an operator comes across an old privy, it could be a cultural resource. Is this true or not? How would BLM will deal this situation?

Response: Any building older than 50 years, including a privy, can be considered a historic resource regardless of its historic function. It can be managed as a historic property under the National Historic Preservation Act, the Archeological Resources Protection Act, or the Federal Land Policy and Management Act provided the privy contains significant information important locally, regionally, or nationally.

AMERICAN INDIAN RESOURCE CONCERNS

38.01 **Comment:** Page 187 the draft EIS discusses subsistence but does not explain the extent to which mining operations approved by BLM in Alaska have not fully complied with the subsistence requirements of the Alaska National Interest Lands Conservation Act (ANILCA). The discussion is based on four federal court-ordered cumulative impact EISs and should be updated to reflect the current way that subsistence resources are associated with mining claims that continue to be mined on the 86.9 million acres of public lands in Alaska.

Response: To date, it is apparent that the mining operations approved by BLM have been fully compliant with ANILCA. BLM will continue to review subsistence issues on a case-by-case basis.

38.02 **Comment:** When we talk about values and we talk about relationships to the landscape, we need to understand that the mining community isn't the only community that has a relationship to this landscape and has values toward this landscape. And these examples that I mentioned are hurting people in very real, physical, and emotional ways, the same way I'm sure that people in the mining community are hurting now with the decline in gold prices and the uncertainty and regulation. I would suggest that when it does consider these regulations, BLM needs to take into account these other values and other communities that share this place. I would like to remind them as well that BLM has a trust responsibility to the Western Shoshone people, to the Indian people, to protect resources important to them. And the Western Shoshone agreed to share their land with the newcomers. And the question to the mining industry is, "Are you willing to share the land with the Western Shoshone?"

Response: The trust responsibility is one of the main issues considered during consultations under these regulations.

38.03 **Comment:** Explain how a Plan of Operations will prevent impacts to subsistence resources, since all federal actions, including Notice-level operations under the existing 3809 regulations, are required to properly consider subsistence in Alaska.

Response: Plans are site specific and can address particular resources and activities that may affect subsistence resources. Currently Notice-level activities are not evaluated for potential impacts to subsistence users because such operations are not federal actions.

38.04 **Comment:** In the second paragraph of the left column of page 3, "American Indian Congress" should be changed to National Congress of American Indians.

Response: We have made this change in the final EIS.

38.05 **Comment:** On page 185, “American Indian Resources Affected Environment” “folk medicine” should be changed to “medicine.” Many traditional medicines are recognized and used by medical doctors in modern applications based on traditional uses.

Response: The term “folk medicine” is used to distinguish herbal remedies as a traditional curative from the pharmacological approach, which uses chemical processes as a curative.

38.06 **Comment:** Pg. 43 "Protection of American Indian Traditional Cultural Values, Practices, and Resources. In general, there should be more emphasis on consultation with tribes, including non-federally recognized tribes.

Response: Consultation requirements are stipulated in the proposed final regulations.

38.07 **Comment:** “Since 1990 most BLM states have actively sought comment from tribal governments about Plans of Operations, with an average of 27% of the Plans being submitted for consultation and 4% being amended or changed in response to consultation”. The figure of 27% seems low for the level of consultation. BLM should be submitting information on all mining activities to Tribes.

Response: Consultation requirements are stipulated in the proposed final regulations. With the new regulations all Plans of Operations could be reviewed by interested American Indian groups.

38.08 **Comment:** BLM cannot avoid review and regulatory authority over exploration operations when such operations may affect Native American interests. BLM has a solemn obligation under its trust responsibility to consult with, consider, and protect Native American interests and resources. Regardless of the National Research Council report (NRC 1999), BLM cannot fail this duty by treating exploration as outside of its regulatory authority.

Response: The Secretary of the Interior has the responsibility to protect these concerns regardless of the action.

38.09 **Comment:** From the perspective of Indian tribes, the existing 3809 regulations have been a source of contention and heartbreak, a fact readily acknowledged by the 3809 draft EIS when it states on page 34, “The existing regulations do not specify performance standards for protecting American Indian traditional cultural values, practices, and resources.” BLM has extensively consulted with American Indians on mine projects, and American Indians have said that impacts to traditional cultural values, practices, and resources cannot be mitigated (page 3 of the draft EIS).

38.10 **Comment:** BLM must have unambiguous authority to deny mine proposals to protect and prevent destruction (undue degradation) of unique or irreplaceable resources of

recognized significance. This authority should include protection of Native American sacred sites and areas of recognized spiritual significance. How does photographing or collecting archeological artifacts to satisfy non-Native American archeologists and then bulldozing or burying the ancient trails, spiritual sites, and open vistas in any way preserve or protect the spiritual meaning of sacred sites for Native Americans? BLM insists that Native Americans meet with BLM representatives and submit to public and agency scrutiny their traditional cultural and religious beliefs about the significance of certain sacred or spiritually significant lands that would be affected by mining proposals. How does this insistence on public discussion of Native American religious beliefs and traditions comport with the religious freedoms accorded to those whose beliefs are those of the dominant culture? (Members of the Imperial County Subcommittee were invited by Tribal members to participate and observe two Section 106 Consultation meetings with BLM representatives at the Quechan Cultural Committee in Tribal Chambers. And we, too, felt offended by the oft-repeated BLM response to tribal religious concerns: “. . . but the 1872 Mining Law . . .”)

Response: Changes in the language of “unnecessary or undue degradation” within the proposed final regulations and the revised 36CFR800 regulations should address these issues.

SOCIAL CONDITIONS

39.01 **Comment:** I am concerned about the effect of these new regulations on our livelihoods, families, lifestyles and communities; I feel these effects are underestimated in the EIS. I have enjoyed the lifestyle the mining industry has given me and I want this lifestyle to continue both for my children and my grandchildren and for generations to come. We don't want to save our land for picture taking only. We need the jobs here. The mine is the only good source of income that I can provide for my family. Even if employment does not last forever, it can bring a family a good job so that in the interim someone can go back to school, homes can be purchased, children sent to college, etc. Some farms and ranches operations get through hard times when someone in the family finds a job in the mining industry. The proposed regulations will seriously hurt rural communities. Mining companies do everything a good neighbor should. A lot of mining money goes to our local schools system, roads, etc.. In addition, miners contribute to these communities in other ways that help form the fabric of these local communities. In sum, mining has helped many towns to become economically stable, self-supporting, thriving areas. In many cases some of these regulations will hasten the demise of many of our small western communities that rely on mining. We need to ensure that the socioeconomic impacts, not only of mining but of the communities they affect, are addressed within the Draft EIS.

Response: A summary of potential effects to individuals and communities has been added to Alternative 3.

39.02 **Comment:** I oppose the continuing federal assault on mining, ranching, grazing and timber rights. The miners, ranchers and farmers are the backbone of our state. BLM does not really help any of them with all these regulations. The mining industry is under siege; it is being regulated out of business. If you eliminate mining you eliminate my lifestyle. And I have earned the birthright to mine my claims. This is a direct attack on my freedom to go and do what I enjoy. We may have to leave the country to go someplace where there's available mining. I'm tired of policing this agency. Isn't our government large enough and intrusive enough already? It's just another one of our freedoms being taken from us. This is not your land. It belongs to the American people. Instead, we need to try to help this industry develop our natural resources and provide badly needed jobs. We are also concerned with the latest attempt of the environmental groups to force BLM into adopting the proposed changes to the 3809 regulations. I don't see them giving up their cars, houses, etc. Where do they think the materials came from to build these luxuries?

Response: A section has been added to Social Conditions on the concerns about increased government regulations and the effect they are having on the West.

39.03 **Comment:** The draft EIS mentioned "national attitudes" in several places and implied that they had some influence on the regulations. This worries me as few people outside of the mining industry and mining communities have anything but a vague knowledge of what

mining is all about. I would feel better if the opinions found in the “national attitudes” were from people who had a clear understanding of both sides of the issue.

Response: The national attitude information is clearly labeled as attitudes (rather than facts). The responses have been relatively consistent over the 6 years they have been collected. A reputable research organization collected the information, using generally accepted data collection procedures. This information was included to present what the general public, rather than an “informed segment,” believes.

- 39.04 **Comment:** The environmental spin is very evident in the discussion of National Attitudes (p.189). Everyone wants clean water and air. However, unnecessary regulation hurts business without helping the environment. We see the data in a different way than is presented. The EIS says “almost 3 times as many thought environmental laws had not gone far enough (46%) as those who thought they had gone too far (17%). We see that less than half (46%) of those surveyed thought environmental laws had not gone far enough. The discussion that follows on p. 192-193 accepts the previous point of view as the gospel and is hostile to those who disagree.

Response: Any of the data in the EIS could be presented in a variety of ways. The discussion of “people in the West and across the country” on pages 192 and 193 is based on the 46% of people who believe that environmental laws had not gone far enough as well as the information in the last paragraph under National Attitudes, which says that 72% of the respondents stated that laws and regulations have not gone far enough to prevent water pollution.

- 39.05 **Comment:** If implemented, Alternatives 3 and 4 will nearly totally destroy the mining heritage and traditions of the Western U.S. Apparently BLM in its assessments had totally neglected the potential impacts to local western cultures and the romance and lure of prospecting and treasure hunting which have been key components of our culture, history and heritage.

Response: A discussion of the mining heritage has been added to the Social Conditions section.

- 39.06 **Comment:** BLM’s draft EIS summarized the impact on communities by saying that there is a “potential for minor harm to mining-independent communities due to a slight decrease in overall mining activity.” The conclusion is simply wrong. If these regulations are adopted, many mines will be closed, terminated prematurely or never started. The economic hardship will not be diffuse but concentrated in small rural communities such as Elko. The harm will not be minor. The loss of a major employer will be devastating to many of these small communities.

Response: This Social Conditions section that addresses effects to communities has been

revised.

- 39.07 **Comment:** Federal agencies are required to address “disproportionately high” effects on low-income populations of their programs (Executive Order 12898). In no place in the draft document is this disproportional economic damage to small, poor, rural communities addressed. In fact, the draft document states: “A review of the document does not reveal any disproportionately high and adverse effects or issues specific to minority or low-income populations.” In the rural west, the cumulative effect of these programs has been large. These withdrawals, laws and regulations cause disproportional economic damage to small rural communities compared to large metropolitan areas. The major metropolitan areas are doing well; the rural areas have been hit extremely hard by the cumulative effect of these federal regulations concerning mineral development.

Response: The Social Conditions section discusses the hardships some rural communities are facing. These types of communities are also discussed under the Cumulative Analysis. The Environmental Justice section has been rewritten. We have deleted the following sentence: “A review of the document does not reveal any disproportionately high and adverse effects or issues specific to minority or low-income populations.”

- 39.08 **Comment:** BLM has the name and address of every single claim holder in these United States. How is it that we did not communicate with these miners and get a sociological profile as to who they are and what they do?

Response: A sociological study would require indepth interviews, including discussion of personal information such as income from the operation, plans for the operation, and outside sources of income. People are generally reluctant to provide this type of information, particularly to a government agency. In addition, the Office of Management and Budget (OMB) prohibits agencies from contacting the public without a detailed and lengthy permission process.

- 39.09 **Comment:** The EIS (Chapter 3, Social) was written in favor of the enviro’s and disfavor toward the miners. It was really slanted. Why don’t our feelings and ideas count? Why are the whines of the enviro’s so important, but miners are treated like they don’t exist or count in the whole process?

Response: This section contained general discussions about demographic and social trends in the western United States and changing attitudes in the population in general. Specific discussions were included on small miners, rural communities, and environmental advocacy groups. A discussion of the specific concerns of rural communities has been added to Chapter 3.

- 39.10 **Comment:** A survey of national attitudes about mining on page 190 is not supported by the factual data presented in the draft EIS. Assuming that noncompliance orders are a

true measure of unnecessary or undue degradation, there were a total of 948 (Table 3-6) out of 24,105 operations (Tables 3-2 and 3-3) since 1981. This means that more than 97% of the mining operations on public lands since 1981 have been in full compliance with BLM authorizations.

Response: People's attitudes toward natural resource management and the compliance levels of mines with mining regulations are two different issues. People may not agree with the regulations and therefore compliance levels would not make any difference, and/or people may not be aware of the compliance levels.

ECONOMIC CONDITIONS

40.01 **Comment:** BLM does not give due consideration to the impacts to Nevada. Nevada's share of the reduced production value, a loss of \$93 million, is more than half of the loss to the western region of the United States as a whole. When indirect economic effects are considered, the total impact could be in the hundreds of millions of dollars. This would indeed be a serious negative impact. BLM must reevaluate this impact, especially as it pertains to the several Nevada counties in which significant mining and mineral exploration activities occur. BLM's conclusion that the loss of jobs in Nevada doesn't matter is wrong.

Response: BLM did not conclude that a loss of jobs in Nevada doesn't matter. The draft EIS notes that Nevada could potentially be affected more than the other states in potential loss of mineral production. But the draft EIS also points out that since most of the provisions of the proposed regulations were already being implemented in Nevada, the 5% decrease in activity in Nevada (for a \$93 million total economic impact) might be overstated. Because of changes in the Proposed Action, the economic impact analysis in the final EIS has been revised.

40.02 **Comment:** Developing hardrock minerals creates new wealth, which is distributed throughout the U.S. economy and society. The public lands provide a major source of domestic mineral production. Mining on BLM-administered lands also provides the Nation's highest paid nonsupervisory wage jobs. These jobs are important in many western states, the cornerstone of western rural economies and are the foundation for the creation of many nonmining service and support businesses. Hardrock mining on BLM-administered land also provides substantial federal and state tax revenues. Thus, any decision to revise the 3809 regulations must recognize the important role of the U.S. minerals industry in maintaining a strong, vibrant economy, now and in the future.

Response: BLM recognizes that the hardrock mining industry is an important contributor to local and regional economies in the western United States. The economic analysis in the draft EIS describes how mining contributes to rural and regional economies, including its contribution to gross state products, the gross domestic product, employment, income, and taxes (see pages 194-210).

40.03 **Comment:** Please address the cumulative effects of this proposed action and all federal actions since 1980 on the economic welfare of rural communities of the West. Please include not only the cumulative effects of the increasing regulation of mining but also of the forest industries and agriculture. All three have had increasing burdens placed on them in rural areas of the West.

Response: BLM recognizes that many rural communities in the West have been affected in a variety of ways by changing demographic, social, economic, and regulatory forces.

Most counties in the West, and particularly the intermountain West, have experienced growing populations over the past 20 years, though some areas are also declining in population and economic opportunity. The reasons for these changes are many and complex. The analysis of the affected environment in the draft EIS has attempted to capture these changes. The analysis has a discussion of the cumulative effects, including factors that have affected the western United States since 1980. (See, for example, Cumulative Effects on pages 79-80; Social Conditions, pages 189-194; Economic Conditions, pages 194-219; and Appendix G, pages A191-A195).

- 40.04 **Comment:** Please review state by state, for the top five mineral products from each state, the percent ownership of mines and reserves by foreign governments, corporations, and individuals. Compare rates of ownership in 1980 versus 1995. What effect does this ownership of our mineral resources have on our national security both militarily and economically?

Response: The development of mineral resources by foreign entities operating legally in the United States is beyond the scope of this EIS. But the draft EIS noted that the hardrock mining industry competes in the global marketplace with U.S. multinational companies operating in foreign countries and foreign-based multinational companies operating in the U.S. It is the policy of the U.S. to support and encourage international economic integration, as reported in the *Economic Report of the President* on the benefits of international trade:

Openness to the world itself makes us more prosperous. The freedom of firms to choose from a wider range of inputs, and of consumers to choose from a wider range of products, improves efficiency, promotes innovation in technology and management, encourages the transfer of technology, and otherwise enhances productivity growth. All these benefits, in turn, lead to higher real incomes and wages. Through trade, countries can shift resources into those sectors best able to compete in international markets, and so reap the benefits of specialization and scale economies. Opening domestic markets to global capital can improve the efficiency of investment, which can promote economic growth. (Council of Economic Advisers 2000)

- 40.05 **Comment:** The draft EIS fails to consider impacts of changes to the 3809 regulations to minerals availability. It fails to consider and discuss the fact that domestic mineral production is necessary to minimize dependence on foreign sources of minerals and to maintain our economic and national security. The draft EIS must discuss how the adverse impacts to the rate of domestic discovery will result in increased reliance on foreign minerals under Alternative 3.

Response: Holding all other factors constant (e.g. commodity prices, technological change, exploration rates outside the U.S., regulatory structures outside the U.S., general economic conditions, etc.), a lower rate of discovery on BLM-administered lands in the U.S. would result in an increased need to acquire minerals from foreign sources. But the Proposed Action is not expected to have an adverse affect on the national defense

stockpile. Since 1993, the Defense National Stockpile Center, which operates as an international commodity broker of strategic and critical materials for the U.S. Government, has been selling minerals in the stockpile at a much greater rate than it has been acquiring minerals. The EIS has been modified to include a graph showing annual sales of and acquisitions to the stockpile.

- 40.06 **Comment:** It is largely gold mining that is doing the environmental damage, and that knocks the strategic minerals argument out of the water.

Response: This comment appears to refer to the fact that about 80% of total worldwide demand for gold is for jewelry fabrication, not for strategic mineral purposes. It is also true that the U.S. is a net exporter of gold, meaning it exports more than it imports to meet domestic needs.

- 40.07 **Comment:** The draft EIS does not address the economic harm to communities that rely on mining. The western United States is already reeling from sustained low commodity prices, and further losses would be devastating. The loss in mining jobs in the West will include losses in jobs and revenues for several counties and states that have small populations and few industries or jobs to employ residents. These job losses will also include service jobs that provide supplies and materials as well as maintenance services to the mine sites. These people's lives will be devastated.

Response: The draft EIS did discuss the potential economic harm to communities that rely on mining. For the Proposed Action the draft EIS noted that communities may be affected, depending on a variety of factors such as the current level of activity in the area, the type of mining, if and how the regulations would affect current and potential future operations in the area, the degree of dependence a community has on hardrock mining, and a community's distance from larger communities. Many current mining operations would not be affected by the Proposed Action. The draft EIS also noted that commodity markets, irrespective of regulatory provisions, can play a relatively more important role in production decisions. The recent downturns in some commodity prices, such as for gold and copper, are examples of how current economic conditions have led to several temporary and permanent shutdowns. The final EIS includes an analysis of the economic impacts due to changes in the Proposed Action.

- 40.08 **Comment:** Forcing polluting industries to provide for their own cleanup will create incentives to develop new technologies that will provide their own economic dividends, while ensuring clean air and water for all. We must always remember that theoretically infinite economic development runs contrary to a sustainable environment.

Response: The draft EIS notes that operators would likely become more efficient in meeting the requirements of the regulations over time. In the long run, the regulation might create incentives for firms to seek new lower cost approaches to mining and

reclamation. This is a reasonable assumption given the propensity firms have to constantly adopt more efficient technologies and business practices. Evidence of this potential can be seen in technological advances over the past 20 years in the hardrock mining industry that have allowed for much greater production at lower costs.

- 40.09 **Comment:** The Environmental Consequences chapter must disclose any positive or adverse social and economic impacts that would result from implementing the draft EIS alternatives. This analysis must be site-specific. A generic or national evaluation will not adequately assess the impacts to local communities and regional economies.

Response: The draft EIS does present an analysis of the social and economic impacts of the alternatives, mainly at the state level. It also discusses how communities would be affected by increased or decreased mining. The more general nature of the community impact analysis reflects the programmatic nature of this rulemaking, that the regulation will affect different types of operations in different ways, that many current operations will be unaffected, and the variability of impacts to potential future operations whose location is currently unknowable because those deposits have yet to be found.

- 40.10 **Comment:** These proposed regulations will force many mining companies to close down or severely curtail their operations in the United States. They will force many people with high-paying jobs into unemployment. They will cause ancillary businesses that rely on the mining industry to shut down or downsize, again increasing unemployment. They will cause a mass exodus of unemployed workers in small towns to larger cities. This will strain the social welfare programs of those cities and turn many small rural communities into little more than living ghost towns. The draft EIS and proposed rule changes fail to consider these effects.

Response: BLM does not anticipate this degree of impact to existing operations. Currently operating mines with permitted Plans of Operations (Plans) will continue to operate under the existing regulations and will be largely unaffected by changes in the regulations. If a currently operating mine proposes to modify its existing Plan with a new facility, then the modification must comply with the new regulations. Modifications that involve expansions of existing facilities rather than new facilities must comply with the new performance standards to the extent practical, which will be determined on a case-by-case basis.

- 40.11 **Comment:** BLM states on page 208 of the draft EIS that using standard Bureau of Economic Analysis (BEA) employment data, determination of location quotients can only be made for the mining sector as a whole because employment data is not reported in greater detail. We feel that BLM's statement is erroneous because employment data may be obtained from the Mine Safety and Health Administration's (MSHA) Office of Injury and Employment Information, which requires quarterly reports on the total number of persons working and total employee hours worked, from specific mining operation

locations. By BLM not clearly naming the specific mining locations affected by the proposed 3809 regulations, the estimated impact on these operations remains nebulous.

Response: This comment has two parts: one addressing location quotients and another addressing the location of specific mining operations. First, the purpose of a location quotient is to estimate the degree of “specialization,” or dependence, a county may have on mining relative to the state’s overall specialization in mining. For example, if mining employment across the state as a whole is 5% of total employment but mining employment in the county is 20% of total employment, then the degree of specialization is 4 for the county ($20\% \div 5\%$). A location quotient greater than 1 shows that a county has a greater reliance on mining than the state overall. The higher the quotient, the greater the degree of specialization. To estimate location quotients one needs data on mining employment in relation to total employment, both at the county and state levels. Location quotients would normally be estimated using BEA employment or income data, but could also be estimated from other data sources as long as *total* employment data were available from the same source, not just mining data. Consequently, MSHA data may be accurate for mining employment, but not for *total* employment. The analysis in the draft EIS (page 208-209) did illustrate how to derive location quotients for a county using BEA income data that shows income in the metal mining subsector of the mining industry.

Second, naming the location of every operation subject to the existing or proposed surface management regulations would not give information on which of those operations might be affected in the future. Whether an operation would be affected will depend on a variety of factors, such as whether a modification of an existing Notice or Plan is filed, the nature of the modification, and how the regulations would address those modifications. For modifications that entail expanding existing facilities, a case-by-case decision will be made on whether the expansion will be subject to the new regulations. If the modification entails adding a new facility, the new facility will be subject to the new regulations, but the existing portion of the operation will continue to operate under the existing regulations. Thus, it is difficult to determine which current operations may be affected in the future.

- 40.12 **Comment:** I am concerned about my country’s balance of payments deficit (now at record levels and increasing) and conscious of the important role that mining, particularly gold mining, plays in reducing that deficit. Every mineral that is mined in the United States represents a product that would otherwise have to be imported at greater expense—sometimes much greater because of having to cross thousands of miles of water.

Response: The United States is a net exporter of gold. In 1999, the U.S. exported an estimated 250 metric tons and imported 210 metric tons (USGS Mineral Commodity Summaries 2000). Assuming an average 1999 price of \$285/troy ounce (USGS Mineral Commodity Summaries 2000), exports totaled about \$8 billion and imports totaled about \$6.8 billion, for a surplus of \$1.2 billion. In 1999, the total U.S. trade deficit for goods was \$346 billion (Bureau of the Census, Foreign Trade Division, May 2000). Holding all

other factors constant, if the \$164 million to \$484 million decrease in mineral production estimated to occur under the Proposed Action in the final EIS were assumed all to come from forgone gold production and were to cause a corresponding increase in gold imports, this would increase the U.S. trade deficit in goods would increase by less than 0.1%.

- 40.13 **Comment:** The draft EIS fails to show how commodities, unlike foodstuffs and manufactured goods, are priced by the market and not the producers. This situation places American operators at a global disadvantage due to costs not experienced elsewhere in the world. By not addressing the market factors and their impact on domestic production, the draft EIS does not show how burdensome these proposed regulations would inflate domestic costs, primarily due to environmental mitigation, which is both subjective and a matter of taste.

Response: The draft EIS does note that for many commodities producers generally cannot affect the market price. Thus, an increase in producer costs cannot be offset by increasing commodity prices. In this case, an increase in production costs, holding all other factors constant, would reduce the attractiveness of minerals on public lands as investment opportunities. In the face of rising costs, however, producers can develop and/or adopt more technologically efficient production techniques to reduce per-unit production costs. (The cyanide heap leach process commonly in use today is an example of a technique that was developed in the past 20 years and has allowed the profitable extraction of disseminated gold, which was previously uneconomic). This has widely been the case for most mining techniques over the past 20 years as statistics show that production has become more capital intensive and less labor intensive.

The economic analysis in the draft EIS and the mine models described in Appendix E do recognize that the proposed regulations will increase costs for many operations.

- 40.14 **Comment:** It does not appear from the draft EIS that the costs of implementing each alternative include environmental values or cleanup costs. For example, what is the effect of water loss to a state from ground water dewatering and later from evaporation from pit lakes? What are the current and potential costs to resources and taxpayers should mines cause environmental damage? Furthermore, the draft EIS describes use and nonuse values (pp. 209, 210) but does not analyze the impacts of the proposed alternative or other alternatives on those values in the alternatives analysis. The final EIS should address these issues.

Response: In a strict quantitative economic sense, the EIS does not analyze the resource tradeoffs in dollars. But the EIS does evaluate the tradeoffs of the alternatives in the form of impact analyses for each of the affected resources. The analysis of use and nonuse values of environmental resources (draft EIS pages 209-210) was included to highlight the fact that environmental resources do have economic value even if they aren't traded in the marketplace like mineral commodities. The draft EIS also pointed out the difficulties of

measuring the value of these resources in dollar terms (draft EIS, page 210), including (1) availability of data, (2) large number of resources to consider, (3) large study area (western United States), and (4) lack of a market structure for these resources.

The economic analysis titled *Benefit-Cost Analysis/Unfunded Mandates Reform Act Analysis* (USDI 2000), which accompanies the regulations and is mandated by Executive Order 12866, does attempt to analyze costs and benefits of the proposal in the manner suggested by the comment.

- 40.15 **Comment:** Figure 3-5 on page 201 would be more meaningful if it showed the number and type of mining operations (Tables 3-2 and 3-3) on public lands open to mining by year.

Response: Figure 3-5 in the draft shows annual changes in gold prices. Tables 3-2 and 3-3 show the total number of Plans and Notices for all types of minerals, not just gold. Thus these two sets of data shown on the same graph (Figure 3-5) would not be meaningful. The analysis in the EIS does note that increased gold production over the past 20 years has been correlated with increased gold prices and advancements in technology.

- 40.16 **Comment:** Exploration and development expenditures for hardrock minerals are dramatically declining in the United States while they are rising in many other parts of the world. This shift is not the result of current low prices for gold, copper, and other metals; the prices for these commodities are the same worldwide. Nor is this shift due to a lack of minerals on public lands because the limited exploration that is occurring continues to discover mineral resources. We do not believe that the draft EIS for this 3809 rule accounts for these critically relevant trends, although the EIS is required to assess the social and economic impacts of this rulemaking as well as the environmental impacts.

Response: Exploration spending trends through 1997 were noted in the draft EIS (see pages 199-200). According to worldwide exploration expenditure data collected and reported annually by the Metals Economics Group (MEG), exploration spending in the United States in 1997 for nonferrous metals was about the same as it had been annually for the previous 10 years on a total dollar basis, but on a percentage basis it has been declining over the previous 6 years (Wilburn 1998). In 1998, U.S. exploration spending declined from about 9% of worldwide spending to 8.6%, but in 1999 it increased to 10% of worldwide spending. (Mining Engineering, December 1999). The EIS has been revised to include trend information for 1998 and 1999. The draft EIS also noted that a variety of factors contribute to increased emphasis of exploration and development outside the United States (see draft EIS page 200).

- 40.17 **Comment:** Please review commodity by commodity and state by state the amount of the given commodity produced from BLM lands in 1980 versus 1995 (or the most recent year for which data is available). The draft document talks about gold and copper. How about

silver, lead, zinc, sand and gravel, limestone, uranium, oil and gas, etc?

Response: We do not have information on the amount of each locatable mineral commodity produced on public lands. Mining operators are not required to report to BLM how much they are producing and how much of that production is occurring on the public lands portion of their permits. (Many operators are located on a combination of federal and nonfederal lands.) The draft EIS portrays current conditions and trends for general categories of minerals: precious, base, and industrial minerals. Because gold was by far the largest precious-metal commodity by value of production, the precious-metal analysis focuses on gold. Moreover, silver is commonly mined in conjunction with gold, and there is no primary platinum metals production on BLM-administered land. For base metals, the situation was similar: copper was the largest category by value of production. The industrial minerals category includes a wide variety of minerals, and consequently, industrial minerals were described more generally by the uses to which industrial minerals are put (e.g. construction, chemical, agricultural, abrasives). Neither sand and gravel nor oil and gas are locatable minerals (in rare cases sand and gravel could be considered locatable). Sand and gravel are “saleable” minerals, and oil and gas are “leasable” minerals.

- 40.18 **Comment:** How can these rules be implemented with statements like the ones that appear on page 204 of the draft EIS, referring to industrial minerals, “The large number of commodities in the industrial minerals category makes it difficult to assess the general trends in exploration and production for each mineral. It is also difficult to assess the general trends for the category of industrial minerals as a whole given the wide variety of end uses.” I guess it’s difficult, and you are going to implement regulations?

Response: The proposed final regulations are not specific to any particular type of mineral. Rather, the regulations address mining practices in relation to how those practices affect the environment. Because the regulations are programmatic, applying to all hardrock minerals that are considered locatable, the analysis of economic conditions focused on the generally recognized categories of minerals: precious, base, and industrial minerals. Although drawing general conclusions about trends that would apply to all industrial minerals would be difficult given the number and diversity of end uses, the draft EIS did list factors that are expected to continue to increase the demand for many industrial minerals. These trends include general overall growth in the economy, the increasing need to explore and develop deposits on public lands due to the assumption that the congressional moratorium on patenting would continue, and that industrial-mineral mining will be increasingly located in the western United States given the rapid population growth of many western states.

- 40.19 **Comment:** Table 3-30 is irrelevant. What percentage of these expenditures for wildlife-related recreation in the study area is actually on BLM lands open to mineral development? The final EIS should have a table that includes only the data for the

affected area, that is, BLM-regulated lands open to mineral development.

Response: The purpose of the information in Table 3-30 was to show economic value in the form of expenditures for nonmineral resources such as wildlife. The data was intended to serve as an example of “use value” for resources not traded in traditional markets. The numbers are not meant to be compared to economic values for locatable mineral resources on BLM-administered lands. There is no comparable information on these expenditures for BLM-administered lands open to mineral entry. In the final EIS, the table has been revised to clarify that these values include all lands within the state and are not intended to represent values only for BLM-administered lands.

- 40.20 **Comment:** The draft EIS must evaluate the economic impacts that proposed changes in the 3809 regulations would have on mining equipment manufacturers and companies that provide goods and services to the mining industry. Many of these companies are located in parts of the country not typically considered mining states, such as Wisconsin (P & H Mining Equipment and Nordberg), Illinois (Caterpillar), New Jersey and Texas (Ingersoll Rand), etc. The continued existence of thousands of jobs in these states relies on a strong mining industry in the western United States. The draft EIS must thoroughly evaluate the economic consequences to these workers and to their state economies caused by changes to the 3809 regulations.

Response: The regional economic impacts estimated using the IMPLAN input-output model account for impacts of purchases by mining operations for equipment and supplies within the 12-state study area. If purchases are made outside the study area, for example, in Illinois or Wisconsin, those impacts would be considered “leakages” from the study area. The draft EIS acknowledges that the hardrock mining industry in the study area does make purchases outside the area and that these expenditures are not captured in the impacts assessed for the study area (see page 207-208). Given the programmatic nature of the Proposed Action and that existing and future operations will be affected in different ways, it is not possible to pinpoint *which* equipment manufacturers and companies would be affected. But to the extent that these manufacturers and companies are within the 12-state study area, the reduced expenditures estimated under the Proposed Action are captured in a general way without specifically naming suppliers.

- 40.21 **Comment:** The “projections” provided relative to the price of gold are poor and do not reflect expert opinion on the outlook for gold. For base metals, the projection that “production is expected to increase slowly but steadily over the foreseeable future” is overly optimistic. No new copper projects are being permitted in the United States. What is the source for this “slow increase in production”?

Response: The projections for gold and base metals were based on published information from the U.S. Geological Survey (USGS) in its annual publications (see, for example, *Mineral Commodity Summaries*, published annually; the annual publications, titled *Gold*

and *Copper*, also published by USGS; and the most recent experts' opinions at the time the draft EIS went to print, such as the annual commodity review in *Engineering and Mining Journal*). The source of information for the projection that copper "...production is expected to increase slowly but steadily over the foreseeable future," was the 1996 annual copper review, titled *Copper* (Edelstein 1997). Given the increased capacity coming online, this projection was reasonable. The draft EIS also reported other issues within the industry, such as the overcapacity situation developing worldwide relative to demand. The final EIS updates the analysis of projections to reflect that continued overcapacity has caused mine production to decline.

- 40.22 **Comment:** All economic statistics provided are current to 1996. Since 1996, the price of all mineral commodities has plummeted, mining employment has dropped, and mining operations have closed. The statistics given may be the most recent available, but they do not reflect current conditions in the mining industry.

Response: The economic analysis of the industry has been updated in the final EIS to reflect more recent conditions.

- 40.23 **Comment:** Appendix G, Figure G-1 and G-2. These maps would provide useful information if the areas of BLM controlled lands were also plotted.

Response: These maps, depicting areas of mining for precious, base, and industrial minerals, were developed by the U.S. Geological Survey and are published annually in the USGS *Mineral Commodity Summaries*. They were developed to show general areas of mineral resource activity, not precise locations of particular mines. As such, they would not necessarily match a public lands overlay. The purpose of including the maps in the EIS was to show the relative location of the major producing areas for precious, base, and industrial minerals, not specific locations for specific mines. For example, the precious metals map on page A-188 shows that the vast majority of precious metal production is in the western United States, where most public lands are located.

- 40.24 **Comment:** The projected decrease of mining activity by 5% would not significantly affect the local economies of most states, since mining is such a small proportion of those economies and most mining companies are moving their operations to other countries where the ore bodies are richer and more economical.

Response: At the statewide level, a 5% decrease in hardrock mining economic activity would be small relative to total economic activity from all activities. Local communities, however, might be more significantly affected, depending on a variety of factors such as the current level of activity in the area, the type of mining, if and how the regulations would affect current and potential future operations in the area, the degree of dependence a community has on hardrock mining, and its distance from larger communities. The final EIS contains more analysis for changes in the Proposed Action and other alternatives.

The analysis also discloses that local communities would be affected in different ways depending on their particular circumstances.

- 40.25 **Comment:** Table 2-3 is biased in not providing comparable economic data for other resources such as wildlife habitats. The Department of the Interior should provide a basis to compare each of the alternatives on a net economic basis, not just the mineral production, employment, personal income, multiplier for mining, and local economies over the next 20 years.

Response: NEPA does not require economic impacts to be analyzed on a net economic basis such as a cost-benefit analysis, nor does it require management decisions to be based strictly on economic criteria. The economic analysis in the draft EIS portrays the economic impacts by changes in employment, income, and output for each of the alternatives relative to continuation of current management. Appendix E of the EIS also describes impacts to different types of mining operations. The impact analysis in the EIS for other resources such as wildlife habitat should be viewed as tradeoffs with other natural resource and economic impacts, even though the impacts for each of these resources is not measured by the same yardstick (that is, dollars).

- 40.26 **Comment:** The following issues should be considered in the final EIS: the future worth of the environment, human health, and intangibles such as natural beauty as well as the present worth. These values should be compared to the future worth of proposed mining operations and the high costs to the Nation for cleanup and reclamation of these mines.

Response: The economic analysis in the draft EIS acknowledged that nonmarket values for natural resources can be significant (see pages 209-210). As stated in the draft EIS, quantifying these values for all the nonmining resources in the study area would be difficult at best for several reasons:

- Data for many resources are either unavailable or available on only a site-specific basis.
- The number of resources and amenities to consider is large.
- The study area is large.
- Markets do not exist for many of these resources, and data on their values is virtually impossible to determine. For example, a plant or insect may have no apparent current value, but a valuable use may be discovered for it in the future.

The draft EIS also considered the impacts of the regulations and alternatives to environmental conditions for a wide variety of resources. In that sense, the draft EIS does portray the *trade-offs* between mining activity and environmental conditions across the alternatives, although not in the sense of a strict benefit-cost analysis as suggested by the comment.

- 40.27 **Comment:** A significant flaw in BLM's economic analysis is its failure to analyze impacts on a regional basis. BLM evaluates impacts nationwide rather than looking at specific

geographic regions that are likely to bear the brunt of the adverse impacts of the proposed regulations. This nationwide analysis allows the impacts to be homogenized and smoothed out across the country, thereby masking the significantly adverse consequences that the proposed regulations will have on areas in which exploration and mining are a major portion of a region's economy. This is a significant shortcoming in light of the fact that the draft EIS includes statements that disclose that Nevada will be harmed more by the proposed regulations than other states.

Response: The economic impacts were estimated for each state. The draft EIS presents employment, income, and value of production data for each state, pointing out the differences among the states. For example, the draft EIS notes that Nevada is the dominant gold-producing state, Arizona leads the nation in copper production, and California produces primarily industrial minerals. In estimating impacts for each state, it was necessary also to estimate which were the dominant mining *methods* used by state, since the regulations and proposed changes in the regulations pertain more to mining practices than commodities. Thus, Nevada and Arizona would be relatively more affected by regulations for open pit mining since the majority of operations on public lands in those states are open pit mines. Impacts in other states were estimated in a similar fashion, with the focus on the dominant mining method used (e.g. placer mining for gold in Alaska, strip mining in Oregon and Wyoming for industrial minerals, etc.).

- 40.28 **Comment:** A gold price of \$340 to \$390/oz was used in gauging the economics of this sector of the hardrock mining industry. Although it is later conceded by the group compiling the draft EIS that the price of gold has actually dropped to \$300, nowhere is the reality of the recent gold price of \$280 or less even mentioned!

Response: The draft EIS did recognize that gold prices have recently fallen below \$300/oz, as reflected in this statement: "... since the latter part of 1996 the price has trended downward rather significantly, hovering in the range of \$280-\$300 for nearly 2 years." (See draft EIS, page 200.) But the analysis of impacts for gold were not based on a specific price for gold. Impacts were estimated as changes in the level of production relative to the current level of production. Thus, if production were estimated to decrease by 5%, then the initial impact would be to reduce to current level of production by 5%. The draft EIS noted that this approach assumes that other factors remain constant, while also pointing out the recent volatility in the gold market. The final EIS has been updated to include recent data on gold prices.

- 40.29 **Comment:** The EIS authors display a lack of understanding of and sensitivity toward the Alaska placer mining industry. The Plan of Operations requirement for virtually all operations will inordinately affect Alaska, which contains the majority of the Nation's gold placer mines, and where most of the mines presently disturb less than 5 acres annually. Many of these operations are in remote areas, where they often represent the only wage-paying jobs. To say that "... small rural communities are expected to lose only a small

number of jobs relative to overall employment” (page 193) understates the fact that these jobs are among the few in rural areas that produce new wealth, rather than recycling tax dollars.

Response: BLM recognizes that much of the placer mining on public lands is in Alaska. Given the programmatic nature of the proposal, the extent to which any particular current or future mining operation would be affected will depend on many factors, making it difficult to pinpoint the level of impact by location, commodity, or mining method. For placer mining in Alaska, the loss of even a small number of jobs might have a relatively greater impact to rural Alaska communities than if those jobs were located elsewhere. In the Fairbanks District where placer mining in the state is concentrated, it is estimated that about 20 of the 60 to 70 existing placer operations are on state-selected lands and could opt to maintain a federal claim or switch to a state claim. Switching to a state claim may mitigate some of the potential economic impacts to those operators. For operators who maintain a federal claim and must submit Plans of Operation, the requirements for submitting information would be commensurate with the size and anticipated impact of the operation. These information requirements should also help mitigate impacts to these operators.

- 40.30 **Comment:** Gold is not a proper surrogate for the mining industry for impact analysis. The economic analysis focuses mainly on the gold industry (principally in Nevada) and largely ignores important base metal and industrial mineral production on BLM-managed lands elsewhere in the West. The draft EIS and economic analyses on which it is based fail to adequately consider impacts to different sectors of the mining industry and have thus severely underestimated the consequences of Alternatives 3 and 4.

Response: The economic analysis of impacts in the EIS does not use gold as a surrogate for the mining industry. The draft EIS states that, for precious metals, gold comprised 93% of the total domestic value of production in 1996, the latest year for which data were available for the draft EIS. With respect to the other two precious metals, silver and the platinum metals group: silver is commonly mined in conjunction with gold, and there is no primary platinum metals production on BLM-administered land. Consequently, the analysis of current conditions and trends in the precious metals sector focused on gold. But the economic analysis in the draft EIS also includes current conditions and trends in base metals and industrial minerals. Further, the impact analysis by state considered the primary types of mining methods used and the wide variety of minerals produced by those methods.

- 40.31 **Comment:** BLM assumes (Assumption 5) the gold price trend is expected to remain relatively stable. Why then did BLM use 1996 gold prices, which were as much as 50% higher than they are today, to assess baseline conditions and impacts of the proposed alternatives?

Response: The term “relatively stable” refers to average annual gold prices over the period from the early 1970s to the present. The draft EIS portrayed gold prices through 1998. (See draft EIS, page 201, Figure 3-5). The draft EIS discussed the recent volatility in gold prices, the reasons for the volatility, and projections of future gold prices. The draft EIS also pointed out that due to falling gold prices, some mines were already curtailing operations and that less exploration was occurring. Further, “baseline” conditions (i.e. the level of current production) were not based on 1996 gold prices but on the value of production for various commodities as published in annual reports of the U.S. Geological Survey.

- 40.32 **Comment:** While the focus of the draft EIS is on the economic impacts to current mineral production, it is nearly silent on the economic impacts to mineral exploration. To quote the draft EIS text, “Success of mining depends on the success of exploration...The lag time between the first discovery of a mineral occurrence and the opening of a mine may be 10 years or more.” (page 81). The Nevada Division of Minerals conducts an annual exploration survey to determine the level of exploration activity in Nevada and to ascertain what factors are influencing this activity level. Responses are generally received from about 50 companies, all of which have exploration programs in the state. Data from companies conducting exploration in the state show a reduction of nearly 30% in spending in Nevada from 1997 to 1998. This reduction is part of an ongoing trend of exploration dollars leaving Nevada and the rest of the United States for Australia, South America, and elsewhere. The implementation of the proposed regulations will only serve to accelerate this trend.

Response: The lower level of mineral development under the Proposed Action in the draft EIS was due in part to a lower level of exploration. Table E-1 in Appendix E of the draft EIS (page A-104) shows an estimated decline in exploration of about 5%. Appendix E also describes a hypothetical exploration project and how the alternatives might be expected to affect project costs for that particular model. Also, the draft EIS noted that mineral exploration and development in other countries has been increasing relative to the United States. And the economic impact analysis in the draft EIS notes that the lower level of activity under the Proposed Action is in part due to a lower level of exploration.

- 40.33 **Comment:** The impacts of tighter regulations on the mining industry are greatly overstated. This industry has historically been driven by the metal markets, and not environmental considerations. The mining industry has laid off and hired workers without any consideration of the effects on local economics. It has automated operations to improve mine output per employee, resulting in a steady decline in jobs. It has proven itself capable of withstanding periods of boom and bust. It has also proven itself capable of disregarding the health and safety of nearby populations.

Response: We believe that we have accurately portrayed the impacts to the mining industry. We also believe that most responsible mining companies do care about the

effects of their operations on local economies and the environment. Though mining technology allows for greater output with fewer workers, mining employment is still an important component of some rural communities in the study area. The nature of many mineral deposits makes continuous mining for an unending period into the future an impractical expectation. Thus, communities and mining companies should work together to prepare for the eventual shutdown of mines to minimize the impact to communities. Many states have provisions in place to assist with these eventualities.

- 40.34 **Comment:** Hard rock mining is responsible for less than ½ of 1% of the nonfarm jobs in Idaho. The economic future of Idaho is tied to protecting our land, water, air, and biodiversity. Strengthening these rules will be good for Idaho.

Response: BLM believes that the Proposed Action would increase the environmental protection of Idaho's natural resources on public lands while recognizing that mining employment is an important component of some communities in the state.

- 40.35 **Comment:** BLM has significantly underestimated the economic impact of the regulations. In the draft EIS, BLM estimates that adoption of the proposed regulations will reduce mining activity by only 5%. The current downturn in world metal prices has had more than a 5% negative impact on the industry, and adopting the preferred alternative will result in further negative impacts to the industry. Because of increased costs and uncertainties of permitting under the Proposed Action, investments in mining jobs could drop by as much as 25%.

Response: We believe the impacts to the mining industry have been accurately portrayed. The 5% impact was based on comparing the current regulations (Alternative 1–No Action) with the proposed final regulations (Alternative 3–Proposed Action) rather than comparing current global economic conditions in the metals mining industry with conditions as they existed 2 years ago. But the final EIS has been amended to include more recent information on global conditions in the metals market. This information reflects lower levels of production due to lower prices or overcapacity. Also, because of changes in the Proposed Action, the final EIS contains new analysis of estimated impacts to the mining industry.

- 40.36 **Comment:** The EIS does not discuss the further burden these regulations place on our struggling mineral and exploration industries. These regulations would seriously hurt these industries.

Response: The Economic Conditions section in the draft EIS (pages 194-219) analyzes current conditions in the mining industry in the 12 western states and estimated impacts to income and employment from changes in mineral output. The final EIS contains more analysis based on changes to the Proposed Action and the addition of Alternative 5, the NRC Recommendations Alternative.

40.37 **Comment:** The draft EIS fails to consider the important findings of the *Fraser Institute Survey of Mining Companies Operating in North America 1998/1999* in evaluating the impacts of the proposals. That study evaluates the mining potential of many states and Canadian provinces, highlighting the difficulties operators face in locating new operations in North America.

Response: The EIS has been amended to note the findings of the Fraser Institute study. The survey conducted by the Fraser Institute originally sought to “...assess how mineral potential and various public policy factors such as taxation and regulation affect exploration investment in Canada” (Fraser Institute 1998). The study was later expanded to cover exploration in “... seventeen American states (states were selected for their hardrock mining activity and/or exploration potential), Mexico, the Canadian provinces and territories, and, for comparison with North American jurisdictions, Chile” (Fraser Institute 1998). The study reports findings of a survey of mining companies using three indexes. The first index, the “Mineral Policy Index,” rated selected American states, Canadian provinces, and Central and South American countries on their mineral potential. The second index, the “Policy Potential Index,” rated these locations on policy potential. Finally, the study developed a composite “Attractiveness Index” by combining the first two indexes to create a measure of “...the effects of government policies on exploration investment” (Fraser Institute 1998). The higher the score on the Attractiveness Index, the more attractive a country, province, or state is considered to be for mining investment.

Though the study asserts that North America has generally become less attractive for exploration investment because of restrictive policies toward hardrock mining in some locations (especially in relation to some countries in Central and South America), several other points in the study are worth noting as well. First, all of the locations that made the top 10 on the Mineral Potential Index also made the top 10 on the Investment Attractiveness Index, *even though 4 of those 10 locations did not make the top 10 on the Policy Potential Index*. From this result, one can conclude that mineral potential is still the dominant factor. Favorable policies cannot make up for a lack of mineral potential. Second, the study gave U.S. states different ratings on the Policy Potential Index, showing that specific state policies, and not necessarily federal policies, which tend to be uniform across states (e.g. BLM’s current surface management regulations), can affect a mining company’s perception of that state’s investment attractiveness. Third, Nevada ranked number 1 on the Investment Attractiveness Index, whereas Alaska and Arizona rounded out the top 10 as ninth and tenth, respectively. Finally, the survey notes, “Nevada and Ontario beat 3rd and 4th place contenders Chile and Mexico in terms of investment attractiveness, even though the two latter countries have reputations for attracting high levels of exploration investment based on mineral potential and favorable policy and foreign investment environments.”

40.38 **Comment:** Alternative 2—the State Management Alternative—has an estimated positive impact to the Nevada mining industry of 5%. This leads the reader to believe that the

public lands will be degraded at an increased rate. Supposedly, BLM based this assumption on the fact that the State of Nevada does not have a NEPA process. But this is not clear in the analysis.

Response: To the extent that increased mineral activity could increase environmental impacts, the estimated 5% increase in activity under Alternative 2 is expected to cause an additional 5% in impacts. In Nevada, it is assumed that there would be less time devoted to administrative procedures required by BLM, such as preparing EISs for approval of a Plan of Operations. The EIS has been amended to clarify this point.

40.39 **Comment:** The argument implied by BLM is that while the share of U.S. gold mining investment in the world has indeed declined sharply since 1992, environmental regulation had virtually nothing to do with it. For one thing, other countries have offered better incentives. For another, virtually all areas of the world now require environmental standards that are similar to those required in the U.S. That view is certainly not shared by mining executives making the investment decisions, or even by other agencies of the U.S. Government. The Bureau of Mines placed the major reason for declining exploration activities back where it belongs, on the increased burden of mining law regulation and time delays imposed by the government. The delay in permitting times, even more than the greater cost and burden of regulation, has caused the hardrock mining industry to invest outside the United States. The Evans study (1996) showed that reversing the increasing burden of regulatory reform that has taken place in the U.S. would boost the U.S. share of world gold mining investment by 2.7%, while reversal of permitting time from 4 years to 2 years, similar to the time faced in other major gold-producing countries, would raise it by an additional 6.8%. By ignoring these factors and estimating only the cost increases due to pending environmental regulation, BLM materially understates the economic impact of these regulations.

Response: BLM recognizes that increased environmental protection requirements and demand for more public involvement at the federal, state, and local levels have lengthened the permitting time for mining operations. At the same time, mining technology has become more complicated, and mines are increasing in size. These factors also contribute to increased permitting times. BLM agrees that, holding all other factors constant, increased environmental regulations in the United States makes mineral development opportunities in other countries relatively more appealing. The draft EIS notes that domestic factors and global factors are exerting on the industry forces that are both “pushing” mineral development out of the United States and “pulling” it into other countries, but that the net effect of these factors on U.S. production is difficult to ascertain (see page 200).

We considered current conditions in the hardrock mining industry as part of the baseline conditions in the analysis of the Economic Conditions–Affected Environment section of the EIS. Trend analysis showing changes in production worldwide, across the United

States, and in the 12-state study area over the past 20 years since the first surface management regulations were adopted, embody the cumulative effects of the legal and regulatory environment within which the industry has operated since then. The focus of the impact analysis in the EIS was to measure the incremental change in mineral activity from proposed changes in the current surface management regulations in relation to changes the industry has undergone over the past 20 years. It is beyond the scope of this EIS to consider whether the entire legal and regulatory environment within which the industry operates should or should not be reversed.

- 40.40 **Comment:** The unfounded material in the environmental consequences portion of the draft EIS provides specific evidence of the inadequacy of the information. For example, in the economic conditions section BLM maintains that, under Alternative 2 (the State Management Alternative), changes in performance standards and environmental review for some states would be the primary cause of a 5% increase in mining activities over the long term without any analysis of or specific reference to standards to which that section refers. BLM's conclusions are pure speculation.

Response: As noted on page A-104 of Appendix E, Alternative 2 would eliminate BLM's role in regulating activity under the Mining Law on public lands. In most states this regulatory approach is expected to reduce the regulatory burden to mining operations, mainly because of changes in environmental reviews (e.g. EISs), thus increasing the level of mineral activity. The greatest increase in activity under Alternative 2 is expected in larger mining operations, specifically those now requiring EISs with extensive baseline studies. But the regulatory burden would not decrease and activity increase uniformly in all states. For example, California, Montana, and Washington have state versions of the National Environmental Policy Act. Proposed operations in these states would not avoid the costs and time commitments of preparing EISs.

With respect to the performance standards, since states would have discretion in when and how to apply them, it would be difficult to determine the impacts of exercising this discretion for any particular operation. The economic analysis in the EIS has been amended to note this uncertainty.

- 40.41 **Comment:** Little consideration was given to the impact on mineral exploration or small businesses. These figures may not have a big effect on large mining operations but for small exploration and mining companies, this is a lot of money.

Response: The EIS notes that small operators would be affected in different ways than larger operators and that the impacts would generally be greater for small mining operations, who would be required to submit Plans of Operations and financial guarantees under the Proposed Action. The economic analysis in Chapter 3 of the EIS notes which provisions of the Proposed Action are most likely to affect small operators, and the mine models in Appendix E also describe the kinds of impacts that different types of small operations might face.

40.42 **Comment:** Investors in mining operations rely on existing principles of corporate law and liability in evaluating their investments. The proposed liability rules would seriously affect the risk that investors, such as joint ventures, would undertake by participating in a mining project. At the same time, imposing liability upon claimants would expose small mining claimants to full liability for the actions of operators, seriously chilling the willingness of claimants to option or lease claims to operators for mineral development. Some industry members have estimated that this provision in the proposed rules by itself could reduce mining claim activity by 50%. If so, then BLM's estimate of the impacts of the proposed rules is seriously underestimated because it fails to account for the impact of this proposed rule change.

Response: The proposed liability rules (§3809.116) are consistent with and are a restatement of BLM's previous position, which has been in the BLM Manual since 1986. These liability rules are supported by both the Federal Land Policy and Management Act (FLPMA) and the Mining Law. Mining claimants hold rights under the Mining Law to develop and produce federal minerals on public lands. Such rights, however, are limited by the responsibility under FLPMA to prevent unnecessary or undue degradation of the public lands, and their liability reflects that continuing responsibility. Mining claimants cannot divest themselves of the statutory responsibilities of holding mining claims or millsites by entering into contractual arrangements with operators to develop and produce minerals from their claims. Thus, operators on mining claims and mill sites on the public lands derive their development and production rights from mining claimants, and in one sense effectively are the agents of the mining claimants. Consequently, there is essentially no change to existing management with regard to liability.

40.43 **Comment:** BLM should address the negative economic impact the proposed regulations will have on small mining operations. Excessive bonding requirements will cause undue hardship on small mining operations.

Response: The purpose of the bonding provision is to prevent unnecessary or undue degradation and to assure that reclamation takes place at no cost to the taxpayer. The EIS notes that bonding will have a negative economic impact on small operators that are not now required to submit bonds. Small mining operators now operating under Notices will have up to 2 years to obtain bonding as long as they do not modify their current Notices. This 2-year window should help mitigate the impact by giving operators enough time to obtain the needed bonding.

40.44 **Comment:** BLM assumes that the environmental regulatory restrictions apply only to mines on public lands (about 40% of gold mining in Nevada), which reduces the estimates by about a factor of two. Most of the mining in Nevada on "private" lands is actually occurring on lands patented under the mining laws and initially explored and developed as public lands. In addition, private lands on which mining occurs in Nevada are invariably surrounded by public lands that are needed for mine expansion, ancillary facilities, and

access, all of which would be regulated by BLM. Hence, in the correct dynamic setting, the estimated 40% figure should be closer to 80%.

Response: For mining operations on a combination of BLM-administered public lands and non-public lands, the proposed regulations would apply only to the portions on public lands. But an environmental analysis of a Plan of Operations would analyze the impacts of the entire operation. In situations of mixed land ownership, BLM makes every effort to coordinate the permitting process with the other regulatory agencies and provisions involved as a result of mixed ownerships. Thus, it is not clear what actual portion of mine production in Nevada the Proposed Action could affect. The EIS, however, has been amended to note that the portion of gold produced in Nevada and affected by the regulations might be greater than estimated, but to unknown degree.

- 40.45 **Comment:** The multiplier estimates used for Nevada and other states are understated. The methodology used by BLM is to use IMPLAN multipliers for each western state with locatable mining, except that in some cases California, Oregon, and Washington are lumped together. These multipliers are then used to calculate the loss of employment due to the proposed regulation. While this is a fairly standard way to proceed, it should be noted that the multipliers for individual states cited by BLM vary dramatically between 1985 and 1990. In our view, it is extremely unlikely that the actual multipliers for Arizona, New Mexico, and Utah doubled between 1985 and 1990. In previous work by Evans (1993), it was shown that for hardrock mines in sparsely populated Western states, the multiplier is approximately 4. Input/output models often underestimate the multiplier effects that would occur from shutting down a mine and turning the surrounding areas into ghost towns. A value of 4 would be in line with the 1990 multipliers for Arizona, New Mexico, and Utah. The Nevada multiplier of 2.69 is probably too low; the implied multiplier of 4.67 used by Dobra (see Dobra figures quoted in Table G-6 of the DEIS, page A-202) is more in line with the reality of the situation in Nevada, where disappearance of the mines would create new ghost towns.

Response: The first part of the comment discusses the 1985 and 1990 multiplier numbers estimated in a USDA Forest Service (1996) publication (General Technical Report FPL-GTR-95). The comment states that it is extremely unlikely that the multipliers would have changed as much as shown in that publication and that they are too low. Some of the changes between these years are fairly large as noted in the comment. But these are Forest Service numbers that were derived in a previous document and are not the multipliers used to estimate impacts in the BLM analysis. The Forest Service results were presented in this section as background information to help evaluate the multiplier results used in this analysis. Other studies were also cited to present a range of impacts estimated in previous studies. In general, the multipliers estimated for this analysis (using the methodology described in the EIS) are within the range of estimates in previous studies. Also, the multipliers used for the BLM analysis are separated into individual states and are presented as a 12-state total.

The comment also focuses on the employment multipliers. The total output multipliers in the Forest Service study for 1985 and 1990 and the multipliers for this study are fairly consistent over the time period. This consistency shows that the impact on the regional economy as a whole has been fairly consistent, but that shifts in employment (i.e. changes in production functions) over time may be influencing the multipliers.

The last part of the comment states that the multipliers are too low. The multipliers used to estimate regional impacts by state do not assume that all of the required inputs for each type of mining activity will be available from within the state where the mining takes place. As a result, some of the multipliers may be lower than multipliers quoted in other studies. We feel that this assumption better represents what the observed regional impacts would be on a statewide basis. Clearly the regional impacts will not be spread out evenly over an entire state, and specific areas would be hit hardest by a reduction in mining.